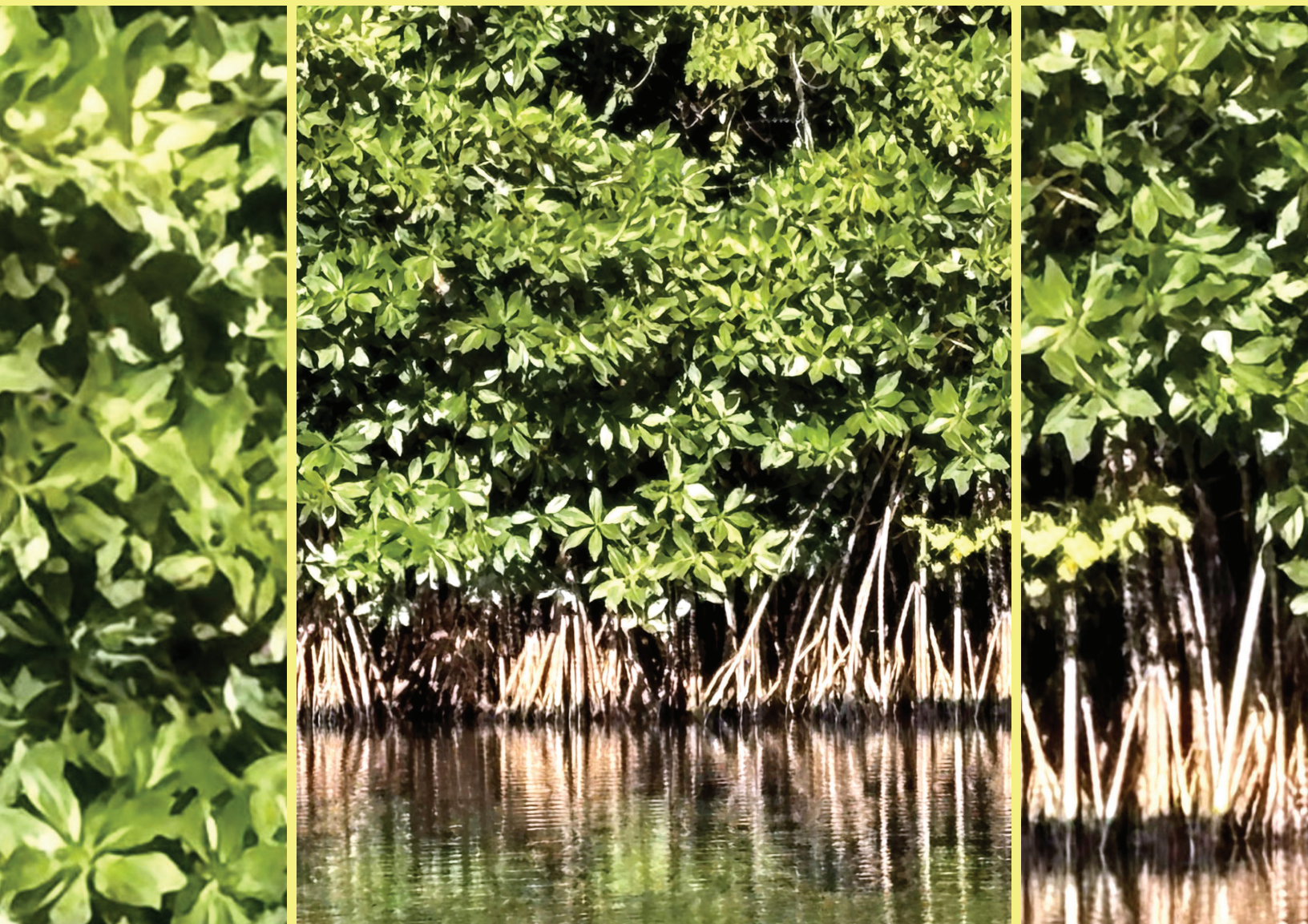


Evaluation of Socioeconomic Co-Benefits of GEF Interventions

An Evaluation Report by the GEF IEO

2025 | November





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Evaluation Report No. 174
November 2025



**Independent
Evaluation Office**
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Foreword

While the mandate of the Global Environment Facility (GEF) is to generate global environmental benefits, these gains are more likely to be sustained when they also create tangible improvements in people's lives. Co-benefits such as better skills, stronger community institutions, diversified incomes, food security, and improved access to markets and services not only support equity and inclusion, but also act as incentives for local communities to participate in and sustain environmental action.

This is the first evaluation conducted by the GEF's Independent Evaluation Office dedicated to the socioeconomic co-benefits. It adopted a novel approach combining geospatial analysis with desk review and field-based case studies.

The evaluation found that GEF projects have generated diverse socioeconomic co-benefits. Across the portfolio, the most common socioeconomic co-benefits are improvements in human and social capital—skills in sustainable land and water management; stronger grassroots organizations; and partnerships linking communities with governments, universities, and markets. Economic co-benefits typically emerge later in the project cycle, mainly consisting of increases in agricultural productivity and diversification of income sources.

The evaluation recommends three priorities for the GEF. First, project design should clearly define pathways to co-benefits, anticipate risks, and ensure equitable distribution. Second, sustainability should be promoted through stronger country-level coordination, led by operational focal points. Third, co-benefits should be tracked systematically during and after implementation. Collectively, these recommendations call for the GEF to embed co-benefits more explicitly in its results framework, strengthen country engagement, and provide clearer guidance and tools for monitoring.

The findings from this evaluation were presented at the 69th GEF Council meeting in June 2025. The Council took note of the conclusions and endorsed the recommendations, taking into account the management response. Through this report, we aim to share these findings with a wider audience to support learning across the GEF partnership.

Geeta Batra
Director, GEF Independent Evaluation Office

Acknowledgments

This report was prepared by Fabrizio Felloni, Chief Evaluation Officer and Deputy Director of the Global Environment Facility's (GEF's) Independent Evaluation Office (IEO); he also led the country case studies in Chad and Mexico. Anupam Anand, Senior Evaluation Officer, IEO, prepared the concept note, led the preparatory stage of this evaluation and a country case study in Nepal, and provided technical inputs to the main report.

Consultants Ezechiel Dingamadji, Fernando Aragón-Durand, and Hari Dhungana participated in and contributed to the analysis of the cases studies in Chad, Mexico, and Nepal, respectively. Eki Ramadhan, Evaluation Analyst, IEO, contributed to the portfolio data analysis; and Graciela Metternicht, Consultant, prepared a background paper on the evolution of the concept and scientific literature on the topic of socioeconomic co-benefits. Pietro Tornese, Consultant, reviewed project-related documentation. Kate Steingraber, Evaluation Officer, IEO, and James Joseph Sylvester-Paz, Knowledge Manager Officer, IEO, participated in select field visits for the Mexico case study.

The combined geospatial and quantitative data analysis was conducted by the Department of Applied Science of the College of William and Mary, under the leadership of Dan Runfolo, Director for Data Science.

Anna Viggh, Senior Evaluation Officer, IEO, provided useful comments on an earlier version of the document. The evaluation benefited from oversight and support from Geeta Batra, Director, IEO.

Marie-Constance Manuella Koukoui, Senior Executive Assistant, supported the evaluation team; Juan Jose Portillo, Senior Operations Officer, provided operations/administrative oversight. Karen Holmes edited the report, and Nita Congress designed and laid out the publication and provided editorial quality control.

The GEF Secretariat, as well as many of the GEF Agencies, provided information, data, and insights during interviews and meetings. Critical information was provided during the country case study work by the GEF focal points, national and local government staff, GEF Agencies, and civil society organizations in the case study countries.

The GEF IEO is deeply grateful to all these individuals and institutions for their contributions, which were critical to the success of the evaluation. Final responsibility for this report remains firmly with the Office.

Abbreviations

AfDB	African Development Bank	PARSAT	Enhancing the Resilience of the Agricultural Ecosystem (Projet d'Amélioration de la Résilience des Systèmes Agricoles au Tchad)
CEO	Chief Executive Officer	RECONNECT	Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits
FAO	Food and Agriculture Organization of the United Nations	SGP	Small Grants Programme
GEF	Global Environment Facility	STRADAP	Strengthening the Resilience of Smallholder Farmers and Ecosystems to the Effects of Climate Change
ha	hectare	UN	United Nations
IEO	Independent Evaluation Office	UNDP	United Nations Development Programme
IFAD	International Fund for Agricultural Development	UNEP	United Nations Environment Programme
IFI	international financial institution	WWF-US	World Wildlife Fund–US
IUCN	International Union for Conservation of Nature		
kg	kilogram		
NDVI	Normalized Difference Vegetation Index		
NGO	nongovernmental organization		
OP	operational phase		

Executive summary

The term “co-benefits” refers to the additional impacts of a policy or intervention beyond its primary objectives. In the context of natural resource protection and climate change adaptation, these co-benefits may include improved incomes, livelihoods, health, and employment; greater gender equality; and enhanced access to essential services.

Socioeconomic co-benefits are increasingly recognized as essential to the Global Environment Facility’s (GEF’s) mandate. Specifically, they help bridge global environmental objectives with local development needs, reinforcing the sustainability and effectiveness of interventions. As highlighted in GEF programmatic directions since GEF-5—and as noted by GEF Independent Evaluation Office evaluations—co-benefits such as improved livelihoods, gender equality, and access to services enhance community engagement, can strengthen local ownership, and reduce resistance to environmental governance.

GEF-funded projects generally reflect one of two distinct approaches: conservationist or development oriented. The former approach, often taken in projects led by United Nations entities or international nongovernmental organizations, prioritizes global environmental benefits, with socioeconomic outcomes regarded as secondary. The latter approach is more typical of projects led by international financial institutions (IFIs) and places stronger emphasis on rural development and outcomes such as income generation and employment, while recognizing the importance of environmental protection.

Projects following this second paradigm tend to focus more on productive and economic co-benefits, supported by the IFIs’ ability to finance infrastructure and productive assets.

This evaluation found substantial evidence that GEF projects contributed to socioeconomic co-benefits alongside environmental and development outcomes. These co-benefits are varied, with the most frequently observed benefits being the strengthening of human and social capital. Geospatial analysis—linking project locations to geo-referenced household survey data—reveals a small but statistically significant positive correlation between the presence of GEF interventions and improvements in household income and asset indicators.

The most consistently observed co-benefits were improvements in human and social capital. Country case studies conducted in Chad, Mexico, and Nepal further substantiate the evidence on socioeconomic co-benefits. In terms of human capital, a common outcome was the acquisition or upgrading of skills related to environmentally sustainable agricultural and forestry practices—such as minimizing chemical use, conserving soil fertility, managing water resources, and protecting native plant species. In Chad, training sessions and tailored radio broadcasts raised awareness of shifting rainfall patterns, encouraging farmers to adapt farming calendars in response to new risks, including frequent flooding. In Mexico, the matching of traditional Indigenous forest management knowledge with modern tools—such as drones, satellite imagery, and

artificial intelligence—reinvigorated youth engagement in sustainable primary production. This integration also heightened awareness of new income opportunities, including ecotourism and payment for ecosystem services.

In terms of social capital, projects helped revitalize grassroots organizations responsible for managing forests, vegetation, and freshwater resources. These efforts also empowered women and youth to express their needs and priorities in traditional decision-making forums. Moreover, the projects facilitated partnerships between local communities and universities, extension services, subnational governments, and public programs, supporting broader goals of natural resource management and climate resilience. In Chad, for example, projects supported grassroots organizations such as village surveillance committees (*comités villageois de surveillance*) and canton development associations (*associations de développement du canton*), reinforcing their engagement in natural resource governance and improving coordination with local administrations. These groups not only helped manage protected areas but engaged in the selection and monitoring of project-funded activities. In Nepal, projects partnered with community forestry groups, federations, and school clubs, generating a network of shared environmental responsibility. In Mexico, community-level governance of natural resources was enhanced through the formal recognition of areas voluntarily designated for conservation.

Regarding economic production and income generation, several co-benefits were observed. These included positive spillover effects on soil fertility and agricultural yields, as well as opportunities for income diversification such as ecotourism and the sustainable use of timber and nontimber forest products. Co-benefits in health and nutrition were also reported. However, the evidence in these domains remains mostly anecdotal, owing to limited data collection at the project level.

High-quality project design is a critical enabler of co-benefits. While attention to socioeconomic outcomes has

increased since GEF-5, many projects still rely on general assumptions rather than clearly articulated theories of change. Although this evolution reflects greater awareness of the importance of co-benefits as incentives for communities to engage in resource protection, many designs lack a clearly defined sequence of the actions required to generate them. The pathways through which specific interventions are expected to deliver co-benefits are often not explicitly laid out.

Project designs tend to overlook potential short-term adverse effects of conservation activities that may reduce community incentives for cooperation. These include restricted access to forest or fishery resources, and crop losses due to wildlife. Such impacts can be mitigated, if identified early, and addressed proactively. It is essential, however, to communicate these risks to communities and jointly identify appropriate responses.

Strengthening existing groups, institutions, and community-led initiatives has proven to be an effective strategy for fostering co-benefits. Most GEF projects focus on reinforcing initiatives already under way—often launched by non-governmental organizations, international cooperation partners, or public agencies. This approach is pragmatic, given the typical project duration in communities is limited to two or three years, with modest funding. Efforts to plan interventions jointly with local actors—such as municipalities, district-level governments, or university outreach programs—can significantly enhance the generation of co-benefits.

Sustaining and scaling co-benefits past project closure requires continued support and institutional anchoring. While a single project phase may trigger the emergence of co-benefits, it is rarely sufficient for their consolidation. One major constraint to sustainability is the brief duration of project engagement, which often leaves insufficient time to provide sustained technical or financial assistance. Even in IFI-led projects, the profitability and long-term viability of cooperatives or enterprises have not received adequate attention. Many of these initiatives remain disconnected from market systems

and, in some cases, reliant on external aid rather than moving toward market-based sustainability.

Sustainability can be improved through better coordination in the GEF portfolio at the country level. Opportunities for synergy among projects include concurrent GEF projects reinforcing each other in the same geographic area, one project building on the outcomes of a previous one, or external partners scaling up the results of GEF initiatives. These forms of coordination could help extend project impact and ensure continuity beyond individual funding cycles. However, such efforts require a deliberate and collaborative strategy—one that has not been consistently implemented.

The GEF's limited in-country presence constrains its capacity to facilitate ongoing coordination and sustain co-benefit outcomes. While GEF Agencies and national executing partners play this role, they have not done so systematically, and no single entity is explicitly tasked with this responsibility. Operational focal points, in particular, could convene stakeholders and promote interproject coordination. For instance, they could support regular learning exchanges among project teams or organize knowledge-sharing platforms. However, such arrangements are not consistently operationalized.

Monitoring socioeconomic co-benefits is essential for project managers and stakeholders alike. Until recently, this has received little attention during project design and implementation. As a result, there is a risk that the full scope of impacts generated by GEF projects may be underappreciated by donors and partners. Merely counting the number of beneficiaries—as currently done—fails to capture the scale and depth of these outcomes. A recent Council document proposed an expanded toolkit for assessing co-benefits (GEF 2024). If consistently applied by lead and executing agencies, these tools could enable more robust measurement and provide clearer insights into how GEF interventions contribute to development objectives.

Recommendations

Recommendation 1: Clearly define pathways for generating socioeconomic co-benefits in project design, while identifying potential risks and mitigation measures. The GEF Secretariat should set clear standards requiring project proposals to explicitly articulate the expected co-benefits within the project's theory of change. Proposals should also anticipate potential negative impacts, outline compensatory strategies, and define measures to ensure equitable distribution—paying particular attention to gender equality and inclusion of marginalized and low-income groups—as part of the quality assurance process. This is particularly important when the co-benefits serve as key incentives for natural resource conservation.

Recommendation 2: Promote the sustainability of co-benefits by strengthening country portfolio coordination, with a central role for the operational focal point and key national stakeholders. In line with the 2022 GEF Country Engagement Strategy, the GEF Secretariat should empower and require country operational focal points to convene regular exchanges—such as an annual workshop—with GEF Agencies, executing agencies, and other partners. These forums would serve to identify implementation challenges, share good practices, and highlight innovative approaches that enhance both global environmental benefits and socioeconomic co-benefits. Such coordination would also support the consolidation and scaling of results through better sequencing and synergy between GEF-funded and other development initiatives. The GEF Secretariat should explore further opportunities for deeper country engagement to capture and manage knowledge from portfolio implementation.

Recommendation 3: Track co-benefits during project implementation and at completion. The GEF Secretariat should provide guidance to the Agencies and partners on indicators and methods to assess the nature, scale, and reach of co-benefits, and track and report on the follow-up done by projects and Agencies.

Introduction

1.1 Background

The Global Environment Facility (GEF) addresses global environmental concerns related to biodiversity, climate change, international waters, land degradation, and chemicals and waste. Since its inception in 1991, the GEF has provided over \$26 billion in grants and mobilized an estimated \$149 billion in cofinancing, through national and regional projects spread over 160 countries. However, little analysis is available on the socioeconomic co-benefits that accrue due to environmental interventions.¹ Interest in the topic has grown over time within the GEF, as evidenced by two recent documents on integrating co-benefits into GEF project design (GEF STAP 2023), and monitoring and measuring the socioeconomic co-benefits of GEF investments (GEF 2024). This evaluation presents an independent assessment by the Independent Evaluation Office (IEO) of the design and results of GEF-funded interventions as they pertain to the topic of co-benefits.

The term “co-benefits” refers to additional positive impacts of a policy or intervention, beyond its primary objectives. In the case of natural resource protection and climate change adaptation, co-benefits can include improved incomes, livelihoods, health, employment, gender equality, market development, and better access to services.² A distinction is often made between the following categories of co-benefits:

- **Prerequisite co-benefits.** Local benefits to be achieved to realize the desired global benefits and ensure their durability. Examples include livelihood benefits that engage local communities in biodiversity conservation.

¹In 2019, the GEF Independent Evaluation Office conducted a pilot case study on socioeconomic effects of GEF projects in Uganda (GEF IEO 2019), as well as a review of co-benefits in the chemicals and waste focal area (Hadjimichael and Batra 2019).

²See also GEF STAP (2023).

- **Incidental co-benefits.** Environmental and socioeconomic benefits that are not critical to achieving the desired global benefits but could help increase the overall impact of the intended investment. Examples include reduced freshwater pollution and the consequent human health benefits, and improved air quality and associated health benefits arising from transitioning to renewable energy.

In the early 1970s, socioeconomic aspects started to be considered in environmental decision-making, driven by the need to balance environmental decisions with sustainable development and social responsibility. The concept of co-benefits began to gain attention in the 1990s (table 1.1), as it was recognized for its potential to enhance understanding of the economic value of environmental interventions (Bisello et al. 2017³). The 1992 United Nations Conference on Environment and Development played a pivotal role in recognizing sustainable development, which balances economic, social, and environmental factors. This laid the groundwork for integrating co-benefits into climate actions (Roxas et al. 2023), combating land degradation, conserving biodiversity, and reducing pollution from harmful chemical substances and waste. Over the past 15 years, the term has become increasingly prominent in the scientific literature, particularly in discussions that aim to reconcile environmental and developmental goals. Notably, reports from the Intergovernmental Panel on Climate Change (IPCC) have highlighted co-benefits as a central theme in their findings (IPCC 2007, 2014a, 2014b).⁴

The concept of socioeconomic co-benefits in relation to biodiversity, land degradation, environmental, and climate

³Seminal contributions had already been made by Brundtland (1987) and, even earlier, by Meadows et al. (1972).

⁴IPCC (2014b, 14) defines co-benefits as “the positive effects that a policy or measure aimed at one objective might have on other objectives, irrespective of the net effect on overall social welfare.” For instance, urban policies targeting transport, energy, or waste management can yield multiple co-benefits, including improved public health and reduced environmental impacts (De Oliveira et al. 2015).

Table 1.1 Key developments in the concept of socioeconomic co-benefits in environmental decision-making

Period	Key development
1990s	Emergence of the co-benefits concept in climate policy discussions
2000s	Adoption of system approaches to identify and realize co-benefits
Post-2015	Integration of co-benefits into the Paris Agreement and the Sustainable Development Goals
Ongoing	Challenges in comprehensive understanding and policy integration

change projects or policies has evolved over time, primarily as a strategy to address multiple goals simultaneously. This is often referred to as a “win-win” approach (Mayrhofer and Gupta 2016), as it helps to avoid trade-offs between developmental and environmental issues. The approach has been particularly relevant in emerging economies, where it has facilitated vertical and horizontal linkages between global, national, and local objectives (Mayrhofer and Gupta 2016; Sethi 2019). The co-benefits approach has been reinforced through various international climate actions, such as the Paris Agreement and the Clean Development Mechanism, as well as nationally appropriate mitigation actions. These frameworks support the idea of achieving both development and climate benefits through single policies (Roxas et al. 2023). The concept has been particularly emphasized in the context of reducing greenhouse gas emissions, where co-benefits include improved air quality and public health (Kim et al. 2020; Scovronick et al. 2021).

The generation of co-benefits depends on how projects are implemented and the local context. From the perspective of individual actors, such as households or communities, there may be perceived “disbenefits” or negative (unintended) effects associated with initiatives aimed at achieving global environmental benefits. For example, when an area—like a forest, river, or marine fishery—is designated as a protected zone, those who previously accessed it for resources like fuelwood, game, nontimber

forest products, water, or fishing may lose access for a certain period. This represents an immediate disbenefit to them linked to project implementation, rather than a co-benefit; and it can diminish the incentive for collaboration and support. These short-term detrimental effects should be identified early in the project design phase to address these trade-offs effectively. Despite its potential, the co-benefit approach faces challenges in policy discourses and development aid, particularly in quantifying and integrating these benefits into decision-making frameworks (Karim, Thompson, and Williams 2017) and ensuring the sustainability of project outcomes.

In summary, the concept of socioeconomic co-benefits has evolved from a theoretical idea to a practical policy tool, with significant contributions from systems approaches, quantitative methods, and regional case studies. However, challenges remain in fully integrating these benefits into policy-making processes.

1.2 Evolution of co-benefits in the GEF

Important international developments concerning co-benefits have influenced the GEF replenishments from GEF-4 to GEF-8 (figure 1.1). These developments have shaped strategic

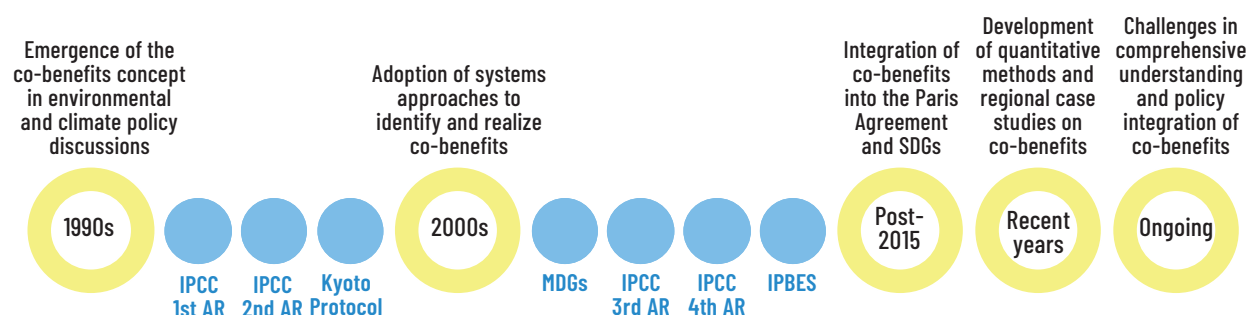
frameworks and other key documents related to the international environmental conventions for which the GEF serves as a financial mechanism,⁵ thereby influencing its programmatic directions. An analysis of the GEF programming directions for GEF-4 to GEF-8 demonstrates the evolving consideration of co-benefits in the proposed project interventions aimed at achieving the mandated global environmental benefits. The GEF-4 programming directions document includes several paragraphs highlighting various benefits beyond environmental improvements, such as social, economic, health, and livelihood enhancements (GEF 2005).

In the GEF-5 programming directions (GEF Secretariat 2010), the (implicit) socioeconomic co-benefits can be inferred from the proposed interventions in its five focal areas and the Sustainable Forest Management/REDD-Plus.⁶ The document highlights the significance of integrated approaches,

⁵These are the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, the Stockholm Convention on Persistent Organic Pollutants, the United Nations Convention to Combat Desertification, the Minamata Convention on Mercury, the Biodiversity Beyond National Jurisdiction Agreement, and the Global Framework in Chemicals.

⁶Reducing Emissions from Deforestation and Forest Degradation, plus the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks.

Figure 1.1 Key milestones in the conceptualization of co-benefits in the literature and at the GEF



Note: PBES = Intergovernmental Science-Policy Platform on Biodiversity and Ecosystems Services; IPCC AR = Intergovernmental Panel on Climate Change annual report; MDGs = Millennium Development Goals; SDGs = Sustainable Development Goals.

such as systems approaches, which address multiple focal areas simultaneously. Additionally, it emphasizes that involving the private sector in GEF activities can result in further co-benefits, including increased investment, innovation, and the scaling up of successful environmental practices.

The GEF-6 Programming Directions explicitly mention co-benefits and synergies resulting from GEF-funded interventions (GEF Secretariat 2014). This replenishment introduced the concept of integrated approaches, highlighting the potential for synergies and co-benefits in projects that address both carbon dioxide and mercury emission reductions. For example, GEF projects within the climate change mitigation portfolio that focus on energy efficiency could lead to co-benefits such as enhanced energy security, poverty alleviation, and increased productivity. Similarly, renewable energy projects may yield co-benefits such as improved livelihoods through job creation.

The GEF-7 programming directions mention co-benefits in the context of the impact programs, which focus on nature-positive and net-zero pathways (GEF Secretariat 2018).⁷ The document highlights the co-benefits of the International Treaty on Plant Genetic Resources for food and agriculture, which stem from the sustainable use of plant and animal genetic resources. The document also emphasizes co-benefits for human well-being, health of ecosystems, and water security that arise from fostering a supportive environment for land degradation neutrality. The Food Systems, Land Use, and Restoration; Sustainable Forest Management; and Sustainable Cities Impact Programs are expected to deliver several socioeconomic benefits, including sustainable food systems enhancing food security, economic

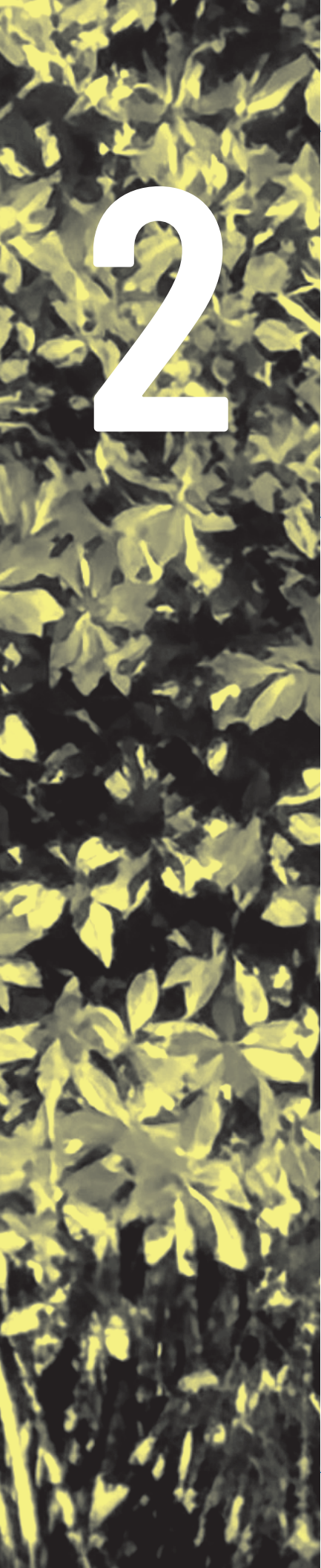
⁷“More complex programs and sets of child projects will tend to offer more entries for development links due to multi-sectoral approach, multi-stakeholder engagements and platforms, and potential for delivering socioeconomic co-benefits, along with enhancing the sustainability of associated investments” (GEF Secretariat 2018, 6).

resilience, and productivity; integrated urban planning, reducing costs and improving efficiency in urban infrastructure; improved waste management and reducing greenhouse gas emissions; and sustainable forest management, supporting economic development and local livelihoods.

The GEF-8 Programming Directions emphasize the importance of co-benefits related to the GEF focal areas (GEF Secretariat 2021). The proposed 11 integrated programs aim to address significant drivers of environmental degradation and deliver co-benefits aligned with the GEF’s objectives across the focal areas.

The GEF sets the objective of “better measuring co-benefits improving human well-being” as one of the five action areas of the GEF-8 Results Measurement Framework. “Tracking and Measuring the Socioeconomic Co-benefits of GEF Investments” (GEF 2024) identifies a set of measures, including more detailed treatment of co-benefits at project design, requiring systematic narratives on co-benefits in project reporting, using geospatial analysis combined with socioeconomic surveys, and establishing standard indicators for co-benefits and for certain categories of end clients.

The specified measures include (1) identifying a small number of standard indicators that would provide an aggregate view of the GEF’s contribution to socioeconomic co-benefits; (2) assessing the feasibility of relying on geospatial analyses linked to population data; (3) better capturing and monitoring the results of GEF financing for Indigenous Peoples and local communities, civil society, and youth (this may include the development of standard indicators or custom ones specific to projects and programs); (4) leveraging the value of qualitative and narrative reporting to demonstrate the value of context-specific socioeconomic results; and (5) continuing to review projects and programs to ensure appropriate consideration of socioeconomic co-benefits during the design stage.



2

Objectives and methodology

The objectives of this evaluation were to (1) analyze the evolution of GEF approaches to environmental and socioeconomic co-benefits; (2) examine cases of co-benefits, identifying their effects and key stakeholders and beneficiaries, as well as the factors that promote or hinder the generation of co-benefits; and (3) provide evidence-based recommendations to the GEF, GEF Agencies, country focal points, and other key stakeholders to improve the design and effectiveness of the implementation of current and future GEF-funded operations.

The evaluation portfolio includes GEF-funded projects from GEF-4 through GEF-8, approved by the GEF Council through June 2024. This scope allows for a review of the historical progress in integrating co-benefits in the design of GEF-funded portfolio projects, in line with the evolution outlined in [chapter 1](#). In terms of observable co-benefits, most of the attention has been given to projects funded under GEF-5, GEF-6, and GEF-7.

The evaluation sought to answer the following questions:

- How has the integration of socioeconomic co-benefits evolved in GEF project design?
- What is the evidence of the co-benefits achieved by GEF projects?
- What are the main factors influencing the sustainability of the co-benefits, and how in turn does sustainability affect the expected environmental benefits?
- How are the GEF partnership and its operational arrangements conducive to generating co-benefits?

These questions are further detailed and mapped against selected [Organisation for Economic Co-operation and Development \(OECD\) criteria](#) in [table 2.1](#). They are explored in line with these respective criteria in chapters 3–6 of this report.

Table 2.1 Key evaluation questions by selected OECD criteria

Criterion	Key question
Relevance	• To what extent are socioeconomic co-benefits discussed at project design? Is there a dedicated analysis? Are the co-benefits captured in the theory of change? Are they captured in the project results framework? • What economic co-benefits are contemplated at design? • Is there specific attention to certain categories of end beneficiaries (e.g., women, Indigenous Peoples, persons with disabilities, other marginalized groups)?
Effectiveness	• What type of co-benefits have been observed during implementation? Are they consistent with the expectations at design? Have any adverse effects been observed? What evidence is there of actual outreach to certain categories of beneficiaries (as above)? • What are the factors that explain the higher/lower achievements in generating co-benefits?
Efficiency	• How do the projects examined by this evaluation compare with the GEF portfolio in terms of implementation timeliness? • What factors affected project efficiency and the generation of co-benefits? • Are knowledge management arrangements supporting efficient project delivery?
Sustainability	• What are the factors supporting the sustainability of co-benefits, and what are the main threats related to (1) institutional and policy factors, (2) economic viability factors, and (3) local capacity and community engagement factors? • Are the arrangements for project implementation and the role of the lead GEF Agencies and executing agencies favoring the sustainability of co-benefits? • Are socioeconomic co-benefits supporting the sustainability of environmental benefits?

Note: OECD = Organisation for Economic Co-operation and Development.

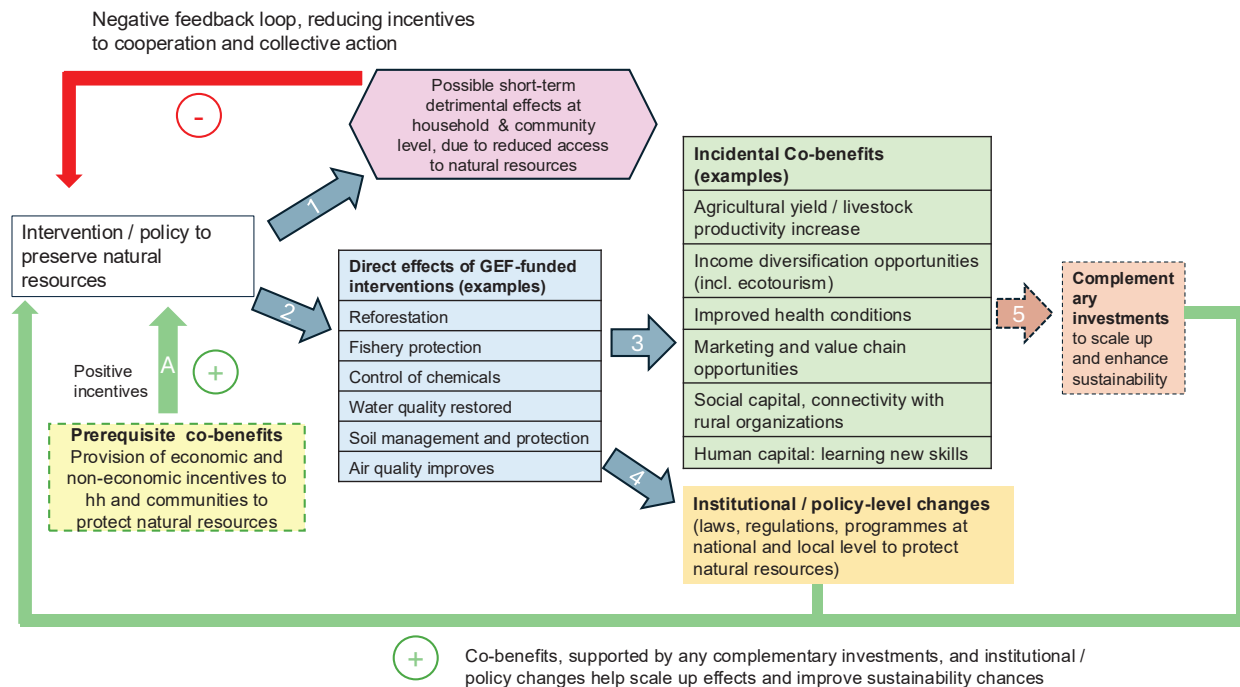
2.1 Conceptual framework

[Figure 2.1](#) presents a graphic scheme of how co-benefits may be generated by or interact with an environmental conservation intervention. On the left and middle side of the figure, the entry point is a conservation intervention (e.g., a project or policy initiative). The prerequisite co-benefits (green arrow A) provide incentives to individuals, communities, local governments, or other stakeholders to support the intended goals of a project (e.g., an income-sharing scheme for a protected area that is also managed as a recreational area). The plus sign (+) shows that prerequisite co-benefits are expected to reinforce the intervention.

Arrow 1 shows that, once the project is implemented, there may be short-term detrimental effects of the

project or policy on individuals' or communities' welfare. For instance, a project that regulates access to a forest or a fishery could reduce access to resources such as fuelwood or nontimber forest products, or opportunities to catch fish. Participating households or communities may no longer support the activities.

Arrow 2, on the other hand, points to the expected direct effects of the project, which may include protection of natural resources and/or reduction in the use of pollutants. In turn, these direct effects lead to (incidental) co-benefits (arrow 3), which may include economic and financial benefits through increased income, diversification of income sources, better access to markets, improvements in health conditions, and/or better knowledge (e.g., enhanced agroforestry management techniques), as well as improved social capital

Figure 2.1 Conceptual scheme of co-benefits in environmental conservation interventions

(e.g., stronger rural organizations, influence over the decision-making of local governments).

Arrow 4 points to changes to the policy and regulatory environments that may also be fostered by the environmental conservation intervention and lead to further support for the intended result of the interventions. Individual and community-level co-benefits, as well as policy and institutional changes, have a positive feedback loop with the implementation of the intervention and its intended objectives, as shown by the green arrow pointing backward.

Finally, arrow 5 shows that complementary investments (e.g., from governmental funds or international cooperation) can help consolidate or scale up the co-benefits generated by the intervention. This is important, as co-benefits may be incipient at project completion and further investment may be required to scale and improve sustainability. In turn, consolidation and better

sustainability prospects would have a positive feedback loop (green backward-pointing arrow at the bottom of the figure).

In summary, co-benefits are not only an additional benefit from the project, they also support the sustainability of environmental benefits.

2.2 Data sources

This evaluation triangulates the findings from several sources

- A review of the GEF project portfolio database available from the GEF Portal.
- A review of seven evaluations conducted by the IEO during GEF-8 covering sustainable forest management, drylands, community-based approaches, water security, the chemicals and waste focal area,

the Global Wildlife Program, and Pacific Small Island Developing States (GEF IEO 2022, 2024a, 2024b, 2024c, 2025a, 2025b, 2025c).

- Quantitative analysis from geospatial analysis matched with data from socioeconomic, demographic, and health surveys (conducted in collaboration with the Department of Applied Science of the College of William and Mary) from 11 countries (Bangladesh, Botswana, Cambodia, Chad, Costa Rica, Ecuador, India, Lao PDR, Mexico, Nepal, and Viet Nam) covering 110 projects.
- Case study missions to three countries (Chad, Mexico, and Nepal), encompassing in-person and remote interviews with key stakeholders (national and local governments, GEF Agencies, project staff, civil society, and grassroots organizations), as well as field visits to project sites and extensive interviews and focus group discussions with community members.

Quantitative analysis

For the quantitative analysis, a database of GEF projects with field-based activities was developed by first identifying a subset of countries in which (1) the GEF had ongoing in situ projects; and (2) previous third-party household surveys had been conducted, providing information on health and income-related outcomes. Thus, 110 projects were selected for the evaluation portfolio ([annex A](#)), with a total value of GEF financing of \$533 million (mean of \$4.8 million per project, with the largest grant being \$39.5 million, and the smallest \$0.4 million).¹

¹ In terms of financing, the top three countries (Mexico, Viet Nam, and India, respectively) represented 48.5 percent (\$276 million) of all GEF funding received for these 110 projects ([figure B.1](#) and [table B.1](#) in [annex B](#)). Viet Nam and Mexico had the largest and second-largest numbers of projects funded by the GEF in this group of projects. The United Nations Development Programme, the World Bank, and the Food and Agriculture Organization of the United Nations were the largest implementing Agency partners, accounting for

To assess the co-benefits of GEF-funded interventions, propensity score matching was used to designate control areas for matching with project intervention sites, creating synthetic “twins” with similar baseline conditions to estimate the impact of the intervention. This method isolated intervention effects while addressing spatial variation. Autoregressive time-series models tracked changes in indicators such as nighttime lights over time, measuring impacts during and after project implementation.²

For the geospatial analysis, trained geocoders extracted location details from project documents and verified their association with GEF-funded activities. Spatial boundaries were either sourced from public data sets ([table B.2](#)) or manually digitized for granularity, limited to second-level administrative divisions or smaller.³ Satellite-derived indicators, including the Normalized Difference Vegetation Index (NDVI) for vegetation health and nighttime light intensity for economic activity, formed key metrics. Other data such as precipitation, air temperature, and forest cover supported outcome assessments.

Household survey data from the [Demographic and Health Surveys \(DHS\) Program](#) were incorporated for triangulation. The [DHS Wealth Index](#), derived from principal component analysis of assets and housing features, provided a socioeconomic benchmark. Scores were normalized per country for comparability, offering additional context to satellite and geocoded data sets.

33.8 percent, 27.2 percent, and 16.5 percent of total GEF funding for the portfolio, respectively.

² An autoregressive model is a statistical technique used in time-series analysis that uses past data to predict future values of the variable being modeled. Nighttime lights are used in economic studies as a proxy for economic activity (see [chapter 4](#)).

³ For unverified GEF project locations, metadata highlighted the lack of geographic precision, while additional attributes—like affected land area, socioeconomic co-benefits, and project focus—were recorded.

Country case studies

The purpose of the country case studies was to triangulate findings from the quantitative analysis and the preliminary desk review of the evaluation portfolio through discussion with the main stakeholders and field visits, which allowed for [ground truthing](#) and better understanding of the contextual factors affecting the main results. The country case studies used mostly qualitative techniques, such as key informant interviews based on semistructured questionnaires and checklists, and focus group discussions, field observations, and asset verification.

The three countries—Chad, Mexico, and Nepal—were selected to represent three macro-regions and diverse ecological and socioeconomic contexts. Their selection was informed by the early findings of the quantitative analysis. Within the countries, projects were chosen taking the following considerations into account: (1) inclusion of projects funded from GEF-5 to GEF-8; (2) representation of different thematic focuses; (3) different stages of implementation (some projects that were only at the formulation phase were included as well); and (4) diversity of GEF Agencies (to the extent possible).

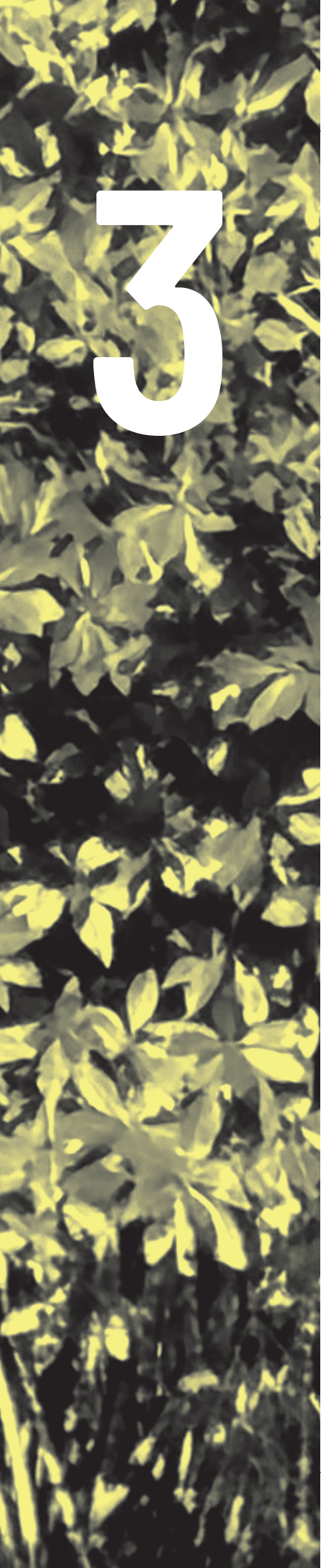
This led to a total of 33 projects, of which 7 were in Chad, 9 in Mexico, and 17 in Nepal ([figure B.2a](#)), with 9 projects visited in the field (3 in each country).⁴ These 33 projects collectively received \$184.6 million in GEF financing ([figure B.2b](#)). Four projects—all from GEF-8—are at the Chief Executive Officer (CEO) endorsement stage; 16 are ongoing, and 13 have been completed ([figure B.3](#)). The portfolio includes projects from all the GEF focal areas except international waters ([figure B.4](#)). Multi-focal projects represent a third of the total case study

⁴ A larger number of projects was visited in Nepal in connection with a concomitant IEO evaluation on nature-based solutions being carried out in that country. One of the projects in Chad was visited by a team member during a previous collaboration with another international agency.

portfolio but receive over half of the financing. More than 75 percent of the projects, accounting for 96 percent of the GEF financing, are full-size projects; the rest of the portfolio consists of five medium-size projects (\$6.42 million in GEF financing) and three enabling activities (\$642,000). The majority of case study portfolio projects were funded solely by the GEF Trust Fund, with some in Nepal and Chad funded by the Least Developed Countries Fund, and one Chad project jointly funded by both funds ([figure B.5](#)). The portfolio features a variety of GEF Agencies, with a notable concentration of projects managed by the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and the International Union for Conservation of Nature (IUCN) ([figure B.6](#)).

2.3 Constraints and mitigating approaches

As with all evaluations, there were limitations in the evidence available. For the quantitative analysis, there was (1) limited geographic and chronological overlap between GEF-funded project sites and demographic and health survey locations; (2) spatial imprecision in project georeferencing, leading to challenges in mapping project sites; and (3) satellite data constraints, such as cloud cover interference or poorer resolution due to change in gradient. To mitigate these limitations, triangulation across diverse data sources and methods ensured robustness. Results were expressed probabilistically to account for uncertainties, highlighting ranges rather than absolute values. For the country case studies, a key limitation was the paucity of rigorous data on the co-benefits associated with the GEF-funded interventions. Again, triangulation with other data sources (desk review, interviews, the quantitative analysis) was instrumental in developing robust findings.



3

Relevance of project design

This chapter examines whether co-benefits have been considered at the project design stage. It assesses the types of co-benefits contemplated, the expected pathways to generating co-benefits, and project design's attention to social inclusion (i.e., co-benefits accruing to disadvantaged groups). The analysis draws on the three country case studies in Chad, Mexico, and Nepal.

3.1 Project contexts in case study countries¹

Chad, Mexico, and Nepal face severe environmental challenges, including deforestation, land degradation, and climate-induced disasters such as floods and droughts. Socioeconomic struggles, conflicts, and migration further destabilize communities, while biodiversity loss and unsustainable land use threaten ecosystems and agricultural sustainability.

Chad faces severe environmental and socioeconomic challenges. At least since the 1990s, desertification and land degradation have significantly affected agriculture and livelihoods. The drying of Lake Chad and erratic rainfall patterns have exacerbated food insecurity, alternating between droughts and floods and making water availability unreliable. In the past five years, abundant rainfall and flooding have affected the central and southwestern parts of the country, with casualties and serious crop losses. The country's fragile security situation, fueled by conflicts, migration, and resource competition, further deepens economic instability, particularly in rural communities. The Lake, Hadjer Lamis, and N'Djamena regions are highly vulnerable to climate risks, insecurity, and land conflicts. In these areas, armed groups restrict fishing and

¹The information in this section is drawn from the evaluation's country case study notes. It includes references to GEF project design and other documents, and material from the GEF Agencies such as World Bank databases.

agricultural activities, worsening food insecurity. The presence of Nigerian refugees around Lake Chad adds pressure to already scarce resources.

Mexico struggles with deforestation and habitat loss due to land conversion for agriculture, logging, and urban expansion, which threaten ecosystems in the Mayan jungle and the state of Oaxaca.

Climate change exacerbates these challenges, with increased droughts, wildfires, and erratic rainfall patterns affecting biodiversity and agricultural productivity. Sustainability issues in key industries, such as the agave-mezcal sector, contribute to environmental degradation by driving deforestation and unsustainable land use. Human-wildlife conflict has intensified as natural habitats contract, leading to greater interactions between communities and species like jaguars and wolves. Socioeconomic inequality further complicates conservation efforts, as Indigenous and rural communities often lack the financial resources and institutional support needed for sustainable resource management.

In Nepal, climate vulnerability is a pressing concern, with increasing risks of floods, droughts, and landslides, particularly in high mountain catchments and watersheds.

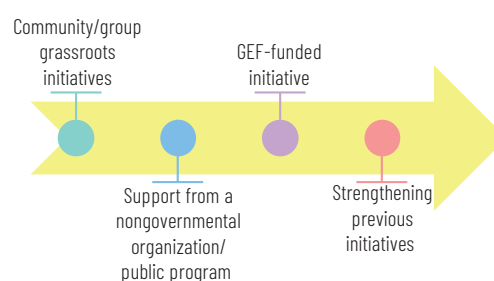
Biodiversity loss is also significant due to deforestation, habitat fragmentation, and poaching, all of which threaten wildlife and ecosystem stability. Land degradation caused by soil erosion, overgrazing, and deforestation continues to affect watersheds in the Himalayan foothills (Churia region) and midhill regions. Institutional weaknesses, including limited coordination among government agencies and the absence of robust policies, further hinder sustainable land and resource management. In periurban areas, particularly in Kathmandu Valley, rapid and unplanned expansion contributes to environmental degradation, increasing flooding risks and reducing green spaces.

In most cases, the GEF-financed projects reviewed were providing further support or adding value to already existing initiatives supported by a nongovernmental organization (NGO), a public program, or a development agency. As shown

in [figure 3.1](#), many communities had preexisting activities, including those that generate socioeconomic benefits, before the advent of the GEF-funded projects. GEF-funded initiatives supported them and provided further technical guidance, financing, or other forms of support, including the following.

- UNDP, through the Seventh Operational Phase of the

Figure 3.1 Sequence of activities in communities visited



GEF Small Grants Programme (SGP OP7) in Mexico (GEF ID 10504), supported a wooden handicraft initiative in an Indigenous community in Capulálpam de Méndez, Sierra Norte of Oaxaca. This initiative had already been started with the help of the Green Forest Alliance. However, with GEF funding, UNDP was able to provide further technical advice for improving the design of handicrafts.

- Through the Sustainable Productive Landscapes project (GEF ID 9555), the World Bank supported an Indigenous community in Ixtepeji (Oaxaca, Mexico) by helping it obtain certification of sustainable forest management. The community had already run economic activities for decades—such as sustainable extraction of timber and nontimber products (resin, mushrooms), ecotourism initiatives, and bottling of spring water—with profits distributed to community members. With certification, it is expected that the community may be able to receive higher prices for the products of existing activities and also access payment for environmental services schemes.

- IUCN's Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits (RECONNECT; GEF ID 9417) project provided local grassroots groups with further training and a motor pirogue, enhancing their capacity to patrol Lake Léré and curb illegal fishing as well as broaden their activities (e.g., emergency rescue services).
- A UNEP project, Catalysing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal (GEF ID 5203) supported local roadside traders in the Salyan district with machines and training for cleaning, grading, and partly processing nontimber forest products (gathered by local people in the mountains from government forests, community forests, or farmland and sold in raw form to the traders) to ensure they bring in higher prices.

3.2 GEF project approaches regarding co-benefits

The country case studies have led to the identification of two broad types of GEF-funded interventions:

- **Projects centered on the protection of natural resources, where secondary socioeconomic benefits (co-benefits) were also contemplated.** This was typically observed in projects led by United Nations (UN) entities, NGOs, and conservation organizations.
- **Projects where socioeconomic benefits (income or asset increase, job creation) were the primary entry point.** A GEF grant then helped include a component on natural resource protection or climate change adaptation. This was observed in projects led by international financial institutions (IFIs), such as the World Bank, the African Development Bank (AfDB), and the International Fund for Agricultural Development (IFAD).

An example of the former type is the project From Conflict to Coexistence, Safeguarding Wildlife Corridors

in Mexico for Sustainable Development (GEF ID 11156), implemented by the World Wildlife Fund-US (WWF-US). In this project, the conceptual link between conservation and economic co-benefits is considered, but implicitly. The project considers financial incentives for coexistence with predators (livestock insurance schemes to mitigate human-wildlife conflict) and rewards to communities that implement preventive measures.² Also in Mexico, the UNEP project Promoting Sustainability in the Agave-Mezcal Value Chain through Restoration and Integrated Management of Biocultural Landscapes in Oaxaca (GEF ID 10869) foresees a revolving trust fund for sustainable mezcal in Oaxaca to support marginalized or cash-poor agave farmers transitioning to more sustainable—although potentially costlier—production methods.

Another example of this type is the RECONNECT project in Chad, which builds on previous initiatives in forestry practices and management of agro-sylvo-pastoral systems, aiming at reducing greenhouse gas emissions and protecting corridors for seasonal wildlife migration. It involves intensive consultation with and training of existing grassroots organizations as well as support to sustainable income-generating activities and the restoration of fertility and productivity of degraded soils.

The WWF-led Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors project (GEF ID 9437) seeks to address challenges to wildlife and landscape conservation resulting from unsustainable use of forest, infrastructure development, and land degradation in buffer zones and wildlife corridors around the Banke and Bardiya National Parks, within the Terai Arc Landscape. This project builds on the work of Nepal's Department of National Parks and Wildlife Conservation and previous work by WWF and other conservation organizations as well

² Additionally, the project promotes "wildlife-based economies" (Outcome 2.2), providing incentives for honey production and other conservation-compatible activities.

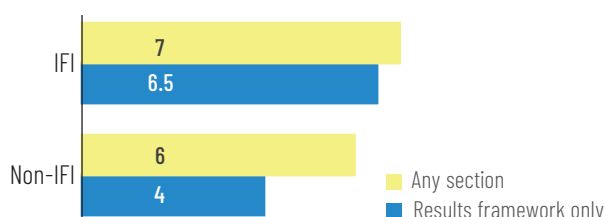
as community-based organizations. The project area faced threats resulting in biodiversity loss; deforestation; degradation of forests, grasslands, and riparian areas; land degradation; and land use-related carbon emissions.

An example of the second type—where the entry point is to increase food security, improve livelihoods, and enhance resilience—is AfDB's Building Resilience for Food Security and Nutrition in Chad's Rural Communities (GEF ID 9050). The topic of food security is central to its rationale. The design explicitly links environmental objectives such as restoring degraded lands and protecting biodiversity to improved local food production. The theory of change includes small-scale irrigation, crop diversification, cereal banks, and training to improve food security in Chad's Sahelian regions. Another example is Mexico's Sustainable Productive Landscapes project, coordinated by the Ministry of Environment and Natural Resources with the World Bank as the lead Agency. Here the entry point is rural development (both agricultural production and small and medium enterprises), while directing attention to biodiversity and sustainable management of natural resources (forests and soil).

3.3 Inclusion of co-benefits in project design

Projects implemented by IFIs were more explicit in identifying co-benefits at design. Design documents of projects under the responsibility of IFIs typically included more references to socioeconomic co-benefits. As shown in [figure 3.2](#), the median frequency of categories of socioeconomic co-benefits mentioned at project design was higher for IFI-led projects compared with other Agencies. Although from the GEF's perspective, the financing is for global environmental benefits, from the IFI perspective, co-benefits are in the fact the primary benefits of a project, particularly when financed through an IFI's own resources.

Figure 3.2 Median number of socioeconomic co-benefit categories mentioned in case study project design, by GEF Agency type



Source: GEF Portal data as of January 2025.

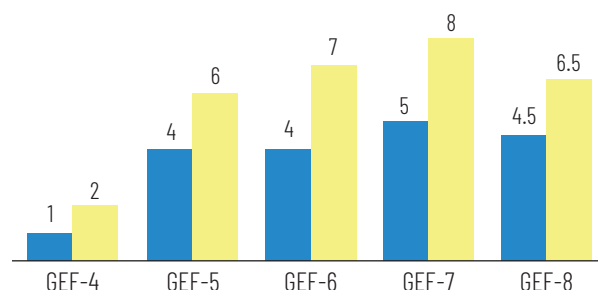
Most project designs mention socioeconomic co-benefits, and attention to co-benefits at design has increased since GEF-5. A document review for 110 projects in 11 countries found that 94 percent of the project designs did mention co-benefits. The case studies in Chad, Mexico, and Nepal corroborated this assessment and validated the same through stakeholder interviews. Of the 33 projects considered in the three case studies, the design of almost all projects mentioned socioeconomic benefits in their results frameworks or theory of change.³ Using the median number of co-benefit categories mentioned at design as a simple indicator of attention to the topic, [figure 3.3](#) shows a clear increase from GEF-4 (one or two quotes in the results framework or in any document section) to GEF-5 and through GEF-8 (four quotes or more).⁴

The socioeconomic co-benefits identified at design are diverse, with human capital reflected in most project designs. The most frequently mentioned socioeconomic co-benefit category is better skills (know-how), a form of human capital growth referenced by 88 percent of the projects

³The exception is an enabling activity in Nepal from GEF-4 (National Adaptation Programme of Action to Climate Change, GEF ID 3412), which lacks a results framework entirely. It is useful to note, in this regard, that the CEO endorsement templates for projects for at least GEF-7 and GEF-8 include a dedicated section on socio-economic benefits.

⁴The GEF-8 programming period was still ongoing at the time of this evaluation.

Figure 3.3 Median number of socioeconomic co-benefit categories mentioned in case study project design documents, by replenishment period



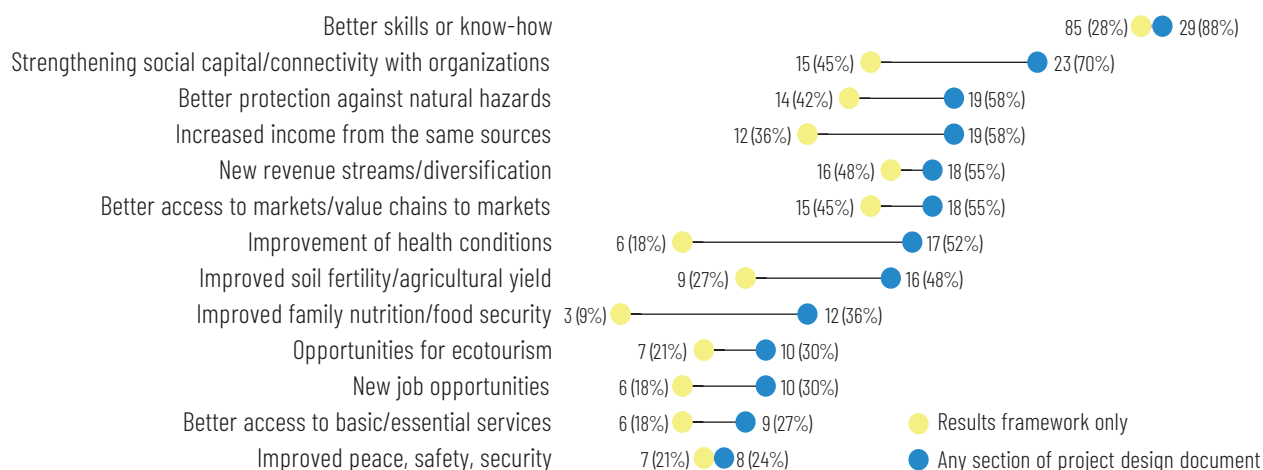
Source: GEF Portal data as of January 2025.

(figure 3.4). Also frequently mentioned were social capital strengthening, new revenue streams/diversification of income sources, and better access to markets. In contrast, socioeconomic co-benefits related to peace, safety, or security are the least common, appearing in only eight projects. Some co-benefits were commonly mentioned in the design documents overall, but were not included in the project results framework. As an example, while improved family nutrition/food security

is mentioned by 12 of 33 projects, only a quarter of these include this co-benefit in their results framework. Opportunities for ecotourism were rare in the project designs of Chad (mostly due to prevailing security issues, including conflict and natural disaster risks) and Nepal, but were more explicitly considered in Mexico.

The general expectation at project design was that environmental interventions would cascade into income generation, and environmental resilience would help secure socio-economic stability. In Mexico, across the portfolio of projects reviewed, resilience-building measures emphasized hydrological services, integrated pest management, and biodiversity conservation to protect agricultural productivity and rural livelihoods. There was also attention to market access. As an example, in a project led by Conservation International (Maintaining and Increasing Carbon Stocks in Agro-silvopastoral Systems in Rural Communities of the Selva Zoque-Sumidero Canyon Complex as a Climate Change Mitigation Strategy, GEF ID 5751), the co-benefits identified at design included access to the carbon credit market and payments for ecosystem services for the conservation of tropical forests in Chiapas. In the World

Figure 3.4 Number and percentage of project design documents in country case studies mentioning socioeconomic co-benefits, by category of co-benefit



Source: GEF Portal data as of January 2025.

Bank's Sustainable Productive Landscapes project, the envisaged co-benefits included both technical support and financial services, such as guarantees and state-supported financial credit schemes, allowing small producers to benefit from sustainable agriculture, agroforestry, and ecosystem services and to better access markets and value chains.

Projects in Chad tended to focus more on land restoration as a pathway to combat desertification, improve soil fertility, and sustain local food systems. As an illustration, the IFAD-led and -cofinanced Enhancing the Resilience of the Agricultural Ecosystem project—Projet d'Amélioration de la Résilience des Systèmes Agricoles au Tchad, or PARSAT (GEF ID 5376) defined the co-benefits as (1) securing against climate risks, and (2) enhancing production and supporting the economic activities of rural households. The ongoing IFAD-led Strengthening the Resilience of Smallholder Farmers and Ecosystems to the Effects of Climate Change (STRADAP; GEF ID 11550), based on women and youth entrepreneurship, identifies co-benefits as (1) strengthened enabling environment for climate resilience within the agro-sylvo-pastoral and fisheries value chains and (2) climate-resilient livelihoods and employment opportunities for rural youth.

Nepal's resilience strategies included afforestation with drought- and water-tolerant species and urban greening to regulate temperatures and enhance biodiversity, particularly in rapidly growing urban centers. For instance, UNEP's Ecosystem-Based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal project (GEF ID 8009) implicitly assumed that planting trees would help reduce erosion and control soil temperature, thus enhancing land productivity.

Few projects have explicitly analyzed the risk of “disbenefits” in the short run, which is important when assessing incentives for communities to cooperate with environmental protection or restoration. While environmental protection is often regarded as beneficial from a societal perspective, from the point of view of individuals, households,

and communities, the short-run socioeconomic effects may be negative, and local actors may face disincentives to cooperating with these projects. However, the GEF's Policy on Environmental and Social Safeguards (GEF 2019) requires dedicated analysis and concrete project design features.

In most projects, this aspect is considered only implicitly and without clear measures to address the problem. A few projects, however, did identify either alternative livelihoods or opportunities to build an income stream from the natural resources to be protected. Examples of these were the RECONNECT project in Chad and, in Mexico, the Wildlife Corridors project and the Agave-Mezcal project. However, diversifying into alternative income-generating activities or generating win-win solutions (e.g., various forms of ecotourism) may require specific business skills or financing instruments, calling for the intervention of other Agencies (for technical assistance or financial services); this aspect was not always clearly articulated in the design.

While designs attempt to identify likely co-benefits, the pathways to achieve them are not specified precisely, particularly in the case of projects with conservation as an entry point.

For example, in Mexico, the Securing Benefits for the Well-Being of Local Communities and the Ecosystems of the Maya Forest project (GEF ID 11274, IUCN), the Conservation International-led project Conservation and Sustainable Use of Biological Diversity in Priority Landscapes of Oaxaca and Chiapas (better known as Sustainable Landscapes; GEF ID 9445), and the Wildlife Corridors project do not make it clear in their design through which partnership the expected socioeconomic co-benefits (e.g., income-generating activities, new job opportunities) would be promoted. These projects do not provide investment funds; it is somehow assumed that economic activities will emerge spontaneously or that local government agencies will intervene to stimulate such initiatives.

Similarly, across the projects reviewed in Nepal, designs tend to present the creation of co-benefits

such as improved soil fertility, better skills, and social capital in general terms. In Nepal, GEF-funded project designs usually make implicit reference to socioeconomic co-benefits, as they are framed primarily around environmental objectives; however, in one project—the IUCN-led Restoring the Degraded Watershed and Livelihoods of Lakhandei River Basin through Sustainable Land Management project (GEF ID 10469)—socioeconomic benefits are central. Elsewhere, these benefits are conceived as emerging as the byproduct of ecosystem restoration, biodiversity conservation, or other environmental interventions (e.g., nontimber forest product processing, leaf plate making).

Examples of project design that have more explicitly identified the causal pathways to co-benefits are the Building Resilience project in Chad and the World Bank's Sustainable Productive Landscapes project in Mexico. The designs of these projects include schemes to support income-generating activities or micro and small enterprises. These are IFI-led projects, with socioeconomic development as their first entry point. In Nepal, the WWF-led Integrated Landscape Management project included some initiatives to support livestock and organic inputs.

Project designs do not discuss the tracking of co-benefits and the indicators to be used. Ideally, some quantitative indicators could be contemplated for income or food security (e.g., anthropometric measurements for children below age five years, or markers for household diet diversification). However, even some qualitative monitoring (e.g., descriptors of revenue diversifications or of changes in cropping patterns, soil fertility, new skills generated, improved governance of community-level organizations and local assemblies) would be useful to track co-benefits. There is limited attention to tracking such co-benefits in the project designs that were prepared before the 2024 GEF document on measuring co-benefits. Partial exceptions exist in the case of some IFIs (IFAD, World Bank); these are due to the corporate requirements of these organizations.

3.4 Provisions for socioeconomic inclusion in project design

Specific groups were targeted for inclusion in some projects to achieve socioeconomic outcomes. Attention to socioeconomic inclusion at design was stronger in Chad and Mexico than in Nepal. In Chad and Mexico, the assessed projects had an explicit intention to engage with special categories of end users—such as women, youth, and Indigenous people—through a variety of targeted instruments, designed to ensure their participation and benefit from the projects ([table 3.1](#)). Examples of instruments used across the examined projects include the following:

- **Stakeholder engagement plans, outlining how to consult with and engage different groups over time, using culturally appropriate methods and language adaptations.** For example, in Mexico's Agave-Mezcal project, measures to ensure inclusion involve, among others, a gender action plan and minimum quotas for women's participation in training, technical assistance, and leadership roles.
- **Local decision-making bodies that encourage or mandate representation from women, youth, pastoralists, and/or other underrepresented groups.** Among other measures, the World Bank's Albiā Local Development and Adaptation Project (GEF ID 10315) requires women's participation in sustainable natural resources management committees.⁵
- **Capacity-building and training activities on topics such as conservation, ecotourism, and agricultural skills, designed to empower historically marginalized groups.** The STRADAP project in Chad foresees the setup of incubators, accelerators, and agribusiness hubs to provide young entrepreneurs with tailored coaching on business development. In Mexico's SGP OP7,

⁵ Albiā means "environment" in Arabic.

Table 3.1 Examples of project provisions for inclusion of various end users

Project	Target	Project provision
Mexico: Sustainable Productive Landscapes (World Bank)	Women	• Funding criteria reward proposals with active female participation • Workshops on governance, leadership, and business skills tailored for women-led organizations/committees • Indicator requires at least 30% female representation in leadership roles
	Youth	• Training in agribusiness, marketing, and digital tools • Innovation networks (e.g., demonstration plots, farmer field schools) • Encourages youth participation in local governance and producer organizations
	Indigenous Peoples	• Project triggers World Bank's Indigenous Peoples Policy • Includes an Indigenous Peoples Planning Framework with culturally adapted engagement strategies • Plans tailored technical assistance and a grievance redress mechanism for Indigenous communities
Mexico: Promoting Sustainability in the Agave-Mezcal Value Chain through Restoration and Integrated Management of Biocultural Landscapes in Oaxaca (United Nations Environment Programme)	Women	• Gender action plan with quotas for women's participation in training, technical assistance, and leadership roles • Prioritizes women-led nurseries or cooperatives when allocating small grants or microloans
Chad: Albiä Local Development and Adaptation Project (World Bank)	Women	• Targets women as up to 50% of beneficiaries in capacity building, improved livelihoods, and decision-making processes • "Female wildlife squads" and outreach for women's training in conservation and climate-smart agriculture • Indigenous people • Establishes local community management committees around protected areas (e.g., Ouadi Rimé-Ouadi Achim Reserve) that include nomadic, pastoral, and other vulnerable communities
Chad: Strengthening the Resilience of Smallholder Farmers and Ecosystems to the Effects of Climate Change (International Fund for Agricultural Development)	Youth	• Plans to establish incubators, accelerators, or "agribusiness hubs" for young entrepreneurs • Aims to support 5,000 youths in launching or expanding green micro-enterprises through coaching and climate information services

Source: Project design documents.

Indigenous youth from forest producer unions were engaged in community management activities, focusing on information technology.

- **Targeted financial incentives such as matching grants or direct project funding to support income-generating activities.** In Mexico's Sustainable Productive Landscapes project implemented by the World Bank, funding

criteria reward proposals that demonstrate women's active participation (e.g., as subproject managers, owners, or board members).

- **Establishment of complaints and feedback mechanisms to raise concerns about exclusion, environmental harm, or social impacts.** In Mexico's Sustainable Productive Landscapes project, a grievance redress

mechanism was planned to address and resolve any Indigenous community concerns in a culturally sensitive manner.

By contrast, in Nepal the identification of specific beneficiaries was not always clear and detailed for most of the project designs. Projects broadly reach out to resource-dependent communities, mostly in rural areas, in the vicinities of national parks, or along vulnerable watersheds or riverbanks. At the same time, projects are generally not nuanced about groups within this population segment—women, Indigenous groups, Dalits,⁶ and some marginalized groups (e.g., fishers). Indigenous peoples, local communities, and women are scarcely mentioned in the project designs, especially with regard to stakeholder engagement.

3.5 Challenges posed by the project cycle

By the time projects start implementation, some three to four years may have typically elapsed from the original proposal preparation. That means that changes to the contexts may have taken place. The lead and executing agencies may face challenges in adapting to a new institutional or legal setting (as was observed in Mexico and Nepal)—and sometimes to ground-level changes (e.g., massive floods in Chad, when the project design was only concerned about drought). Retrofitting the design to such changes (e.g., reducing the geographic scope or the number of communities or cooperatives supported) may introduce further delays or alter the original objectives. This is not an issue specific to socioeconomic benefits, but certainly affects the timelines of activities supporting them.

⁶ The lowest Hindu social caste, literally, “a downtrodden people.”

3.6 Summary

- Most GEF-funded projects built upon preexisting activities (public programs, or those undertaken by NGOs or other development agencies) and community-level dynamism, adding technical support, training, and exposure to good environmental practices.
- Two main typologies of interventions were identified: (1) projects focused on natural resource protection, often led by conservation NGOs; and (2) projects centered on socioeconomic benefits, mainly led by IFIs, with environmental components financed by the GEF.
- Attention to socioeconomic co-benefits at design has increased since GEF-5, with socioeconomic co-benefits now widely acknowledged in project designs. Key co-benefits include skill development, social capital strengthening, income diversification, and improved market access.
- The pathways to generate co-benefits were not always well articulated; many conservation-focused projects lacked clear strategies for linking environmental goals with economic gains. Short-term negative effects linked to conservation, as well as compensatory measures, were not well explored at design. There was limited attention to the tracking and measurement of socioeconomic co-benefits. More attention to this aspect has emerged in recent projects.
- Inclusion considerations varied. In Chad and Mexico, projects deliberately engaged with women and Indigenous groups (and in some cases, also with youth); Nepal’s projects were less explicit in targeting marginalized groups.
- A generic challenge for projects is the time laps between original proposal preparation and startup of activities (typically three to five years), which exposes the project to a risk of change in the political, policy, or local agroecological context.

4

Effectiveness in generating socioeconomic co-benefits

This chapter examines the extent to which socioeconomic co-benefits (expected and unforeseen) have been achieved, what type of co-benefits are “visible,” and the underlying factors. It presents evidence from the quantitative geospatial analysis, including the matching of satellite imagery with socioeconomic surveys. It also presents more qualitative evidence from recent IEO evaluations and from the country case studies in Chad, Mexico, and Nepal.

4.1 Review of quantitative geospatial analysis

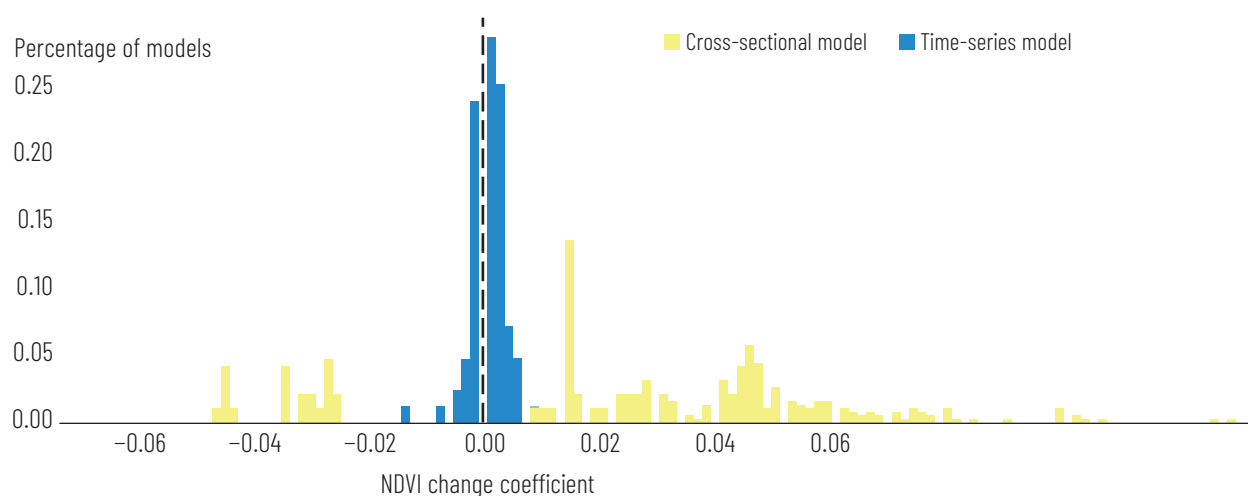
Primary environmental project benefits

This section briefly presents evidence from geospatial analysis conducted in 11 countries on vegetation cover (see [chapter 2](#) for a discussion of the methodology), which can be considered a proxy indicator of some of the direct benefits of GEF-funded interventions.

Evidence from the analysis suggests that, overall, GEF activities are associated with small but statistically significant improvements in vegetative cover. For each geometric location at which a GEF project activity was known to have occurred, the satellite-derived data were disaggregated to create time-series information on vegetative health from the Normalized Difference Vegetation Index.¹ In the pooled analysis across all countries studied, GEF projects generally exhibited a positive correlation with vegetation indicators. A propensity score-matching cross-sectional model reported an average mean

¹ NDVI is an indicator of the health and density of vegetation cover. It covers values from +1 (dense vegetation) to -1 (water surface).

Figure 4.1 Statistical association between GEF projects and cross-sectional and time-series stochastic simulations for Normalized Difference Vegetation Index



Source: Geospatial and quantitative data analysis 2024. Figure shows percentage of models leading to same Normalized Difference Vegetation Index (NDVI) change coefficient.

association of +0.001; an autoregressive time-series model reported +0.024; these are both statistically significant at the 0.05 level ([figure 4.1](#)).

At the country level, estimates of the impact of GEF project activities on NDVI in Cambodia, Costa Rica, India, and Nepal were consistently positive. Using the global mean of NDVI (0.387) in 2000 as a baseline from which to compare effect sizes, positive effect estimates ranged from less than 1 percent (Costa Rica) to approximately 12 percent (Nepal, time series). In Mexico, a negative association was found between the presence of GEF-funded interventions and NDVI trends. However, this finding needs to be interpreted carefully, given the broad problem of deforestation in the country, while the GEF-funded projects have had localized effects in preserving vegetation. This more prudent interpretation is supported by the evaluation's observations in the field, as further discussed in the remainder of this report.

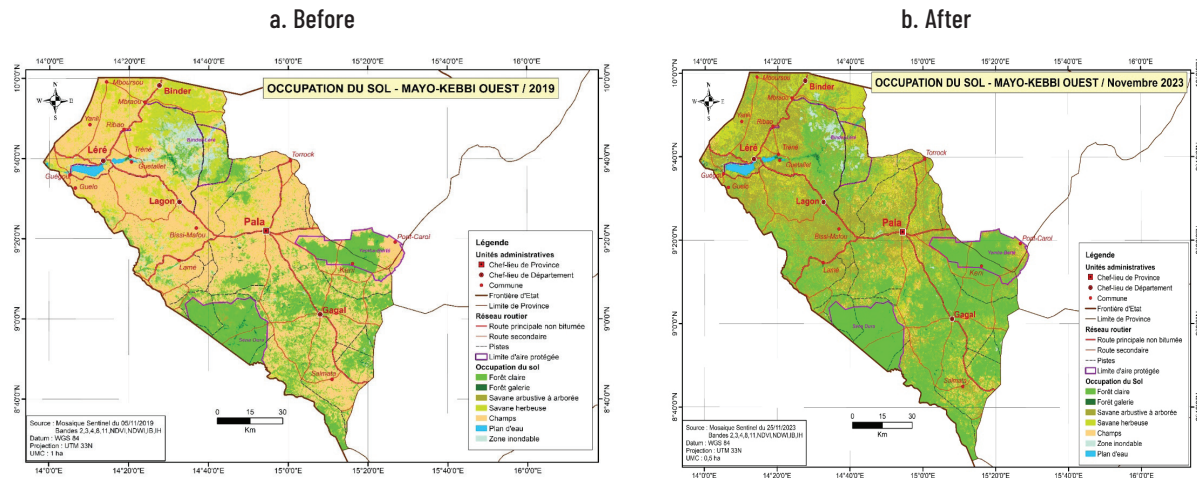
Few of the GEF-funded projects reviewed have analyzed geospatial data to monitor vegetation cover. Most projects have not developed a comprehensive analysis of the

vegetation cover, even when the individual initiatives are geolocalized. An exception is the RECONNECT project in Chad. From 2019 to 2023, the project contributed to the creation of the 3 ecological corridors, 51 community forests, and 25 forest blocks. According to the project's terminal evaluation, vegetation increased from 305,611.06 ha to 968,486.45, and carbon dioxide sequestration increased from 12,637,464.1 tons to 29,484,547.8 tons, over the entire project intervention area. However, there were differences in the change patterns of different types of forest ([map 4.1](#)).²

Project co-benefits

Nighttime light can be a first crude indicator of economic co-benefits. Nighttime light, as observed from satellite imagery, has been used in the economic literature as a proxy for economic activity and local gross domestic

²Gallery forest declined from 14,676.3 ha to 4,015.54 ha in 2023, open forests increased from 14,746.46 ha to 447,624.65 ha, and wooded and shrubby savannahs increased from 276,188.3 ha to 516,846.26 ha in 2023. Source: IUCN (2024).

Map 4.1 The RECONNECT area before and after the project

Source: IUCN 2024.

product (GDP) in rural areas of developing countries.³ An important caveat is that nighttime light depends on the availability of an electricity grid. Thus, indicators of nighttime light may be influenced by the presence/absence of rural electrification programs that may not be connected to the specific project to be assessed.

Data suggest weak correlation between the presence of GEF-funded activities and nighttime lights in project areas.

At the global scale, evidence suggests a small but statistically significant (0.05) positive impact of GEF-funded activities on nighttime lights. This finding is grounded in time-series models, which estimated a consistently positive signal across nearly all of the 11 countries. However, the results from the cross-sectional models were much more variable and tended to be in the neutral or negative direction. This suggests that GEF-funded activities tend to increase the rate of nighttime light growth relative to baseline conditions, but not relative to neighboring areas. Again, findings need to be

interpreted carefully, given the caveat on the confounding effects of exogenous electrification programs.⁴

Matching of project georeferencing with existing socioeconomic surveys

GEF-funded activities are positively associated with increases in household wealth. Previous in situ demographic and health surveys, which solicited information on household wealth, have been used in four countries where survey coverage overlapped with GEF-funded activities (Bangladesh, Chad, India, and Nepal). Cross-sectional analysis in the four countries shows that, at the 0.05 significance level, there was significant association between GEF activities and household wealth indicators (average mean of 0.144; [figure 4.2](#)). In this case, the finding is relatively robust with regard to the uncertainty in

³For a comprehensive discussion of opportunities and limitations, see Addison and Stewart (2015).

⁴Interestingly, a pilot case study carried out by the IEO in 2019 in Uganda found that the presence of GEF-funded projects had no significant correlation with nighttime lights (GEF IEO 2019). The study highlighted issues with data quality and exogenous factors, a caveat that applies to this evaluation as well.

the data, with the majority of models agreeing that the impact of the GEF is in the positive direction.⁵

4.2 Evidence on co-benefits from recent IEO evaluations

During the GEF-8 cycle, seven IEO evaluations were conducted that provided some evidence of socioeconomic co-benefits.

Key findings from these evaluations, which are enumerated in [chapter 2](#), are that the co-benefits can be quite diversified, beyond the intended objectives at design. These evaluations agree that natural resource conservation opened opportunities to improve incomes as well as diversify income sources. For instance, the evaluation on sustainable forest management found that about 55 percent of the evaluated projects reported

⁵ Note that it is challenging to match the GEF-funded projects with the available household surveys, chronologically and geographically.

increases in income, while 52 percent noted improvements in community empowerment (GEF IEO 2022). In the Congo Basin, through social responsibility contracts negotiated between concessionaires and local communities, \$15.1 million was channeled into community-led infrastructure, services, and local economic opportunities. The evaluation cautions that the effects were uneven, due to weak transparency of local governance.

The evaluation on community-based approaches found that, in Madagascar, the communities involved in mangrove restoration were able to sustain their economic activities, such as selling crabs and fish, after the project's closure, due to well-established market linkages (GEF IEO 2024a). In Indonesia's Citarum project, environmental restoration was coupled with grants for alternative livelihoods, supporting activities such as handicrafts and palm sugar production, which continued beyond the project period due to effective market integration. The evaluation on chemicals and waste found that projects often generated new economic

Figure 4.2 Positive correlation between GEF activities and household assets



Source: Quasi-observational propensity score analysis implemented under conditions of uncertainty.

Note: The height of each bar represents the number of cross-sectional models that estimated a given effect on household wealth. $p < 0.05$.

opportunities, particularly in the waste management and recycling sectors (GEF IEO 2025b). The evaluation of Pacific small island developing states noted that training delivered to local communities helped integrate environmental management with economic development, particularly in the fisheries, ecotourism, and waste management sectors (GEF IEO 2025c).

Another benefit, albeit less frequently mentioned, was that of improved food security. This was noted by the evaluation on water security (GEF IEO 2024b). Improved access to clean water helped enhance agricultural productivity and reduce vulnerability to droughts and erratic rainfall; eventually, this led to better food security and nutritional outcomes. The evaluation on GEF support to drylands countries noted that GEF-funded initiatives helped improve land productivity through sustainable agriculture, agroforestry, and climate-adaptive farming techniques, enabling farmers to increase yields and stabilize household incomes (GEF IEO 2024c).

Expected health benefits were mainly mentioned in the evaluation on chemicals and waste. A specific case was that of the efforts to phase out dental amalgam and mercury-containing skin-lightening products, which is expected to decrease mercury exposure and thereby enhance the health of vulnerable groups, such as pregnant women and children.⁶

Another common co-benefit cited was the strengthening of community-level governance on natural resources. The evaluation of community-based approaches reviewed the Effective Governance for Small Scale Rural Infrastructure and Disaster Preparedness in a Changing Climate project in Lao PDR (GEF ID 4554), which strengthened local governance by enhancing community participation in decision-making regarding infrastructure and disaster preparedness, increasing cohesion and awareness of environmental challenges. Improved

governance was similarly observed in Côte d'Ivoire, where the establishment of village conservation groups and a participatory park management committee reduced poaching and agricultural encroachment, while strengthening relationships between communities and authorities. The evaluation on water security mentions the creation of participatory management structures that empower local populations to take control of water resources. The drylands evaluation illustrated examples of improved governance structures for land management and pastures, which helped enhance coordination among the main stakeholders (e.g., farmers, livestock herders, water point users), leading to more inclusive decision-making.

Only the evaluation on sustainable forest management documented adverse effects. While many projects addressed local livelihood needs through job creation, skills development, and economic diversification, others had inadvertently led to negative socioeconomic consequences (e.g., by displacing traditional land uses)—or had even caused social conflict, due to inadequate compensation mechanisms or poor planning.

Two common points emerged from these evaluations, which are further discussed in the next chapters of this report:

- **There was limited hard evidence on co-benefits**, due to the absence of dedicated indicators in project reporting, leading to a clear risk of underappreciating the co-benefits achieved.
- **There were recurrent sustainability risks**, due to limited arrangements made to secure financial support (particularly for infrastructure maintenance), and little capacity building done on market access, thus restricting the benefits of agricultural productivity increases.

⁶ Similar conclusions were reached by an IEO review of co-benefits of projects in the chemicals and waste focal area (Hadjimichael and Batra 2019).

4.3 Evidence on co-benefits from country case studies

Overall, the three country case studies confirm that GEF interventions have contributed to generating diverse co-benefits, often extending beyond the expectations at design. Even if the evidence is predominantly qualitative, it shows abundant examples where conservation of natural resources is combined with household- and community-level welfare, creating opportunities for mutual positive incentives. The strengthening of human capital and social capital emerge as examples of co-benefits, as well as drivers to generate other (economic) co-benefits.

Two qualifications are in order:

- First, there are few examples where the projects have attempted to quantify the co-benefits, and terminal evaluations have given limited attention to this aspect. Review of the available documentation, interviews, and field visits suggest that there is a risk of underreporting the socioeconomic benefits of GEF-funded projects.
- Second, the results achieved are not due exclusively to the GEF interventions. The projects examined by this evaluation have been implemented in areas where other projects have been active in the past and other projects are taking place at present. Thus, GEF-funded interventions have provided a contribution, often adding value to existing dynamics, rather than generating them ex nihilo.

Human capital improvement is the most often observed co-benefit. Among the most easily observable co-benefits are increased capacity and skills in natural resource management, also leading to better understanding of what needs to be done to improve resilience to climate risks. Members of communities, groups, enterprises, and cooperatives assisted by the projects have acquired better knowledge and technical

skills. Examples of such knowledge acquisition include the following.

- **More accurate fact-based interpretation of weather patterns.** The UNDP-led Community-based Climate Risk Management in Chad project (GEF ID 8001) supported local radio networks that broadcast regular programs on weather in the local vernacular, advising on the timing for sowing and applying fertilizer and other inputs. Radio programs are based on data from the national meteorological agency, aggregated from weather stations (UNDP had supported the construction of some of these stations, with GEF funding) and provide warnings on the risk of flooding. Interviews with communities showed that farmers better appreciate the risk of losing their rice harvest to flooding if they continue to grow paddy during the rainy season, as per tradition. They now consider changing their cropping calendar and patterns.
- **Specific technical skills such as the production of organic inputs and low-chemical crop management techniques.** This was one of the initiatives supported by the World Bank's Sustainable Productive Landscapes project in Mexico. Building on efforts by the Oaxaca state secretariats for agriculture and environment, local farmer groups were trained in techniques such as the preparation of composting, bokashi, vermiculture, and other organic fertilizers, to be applied to milpa and vegetables and were provided with equipment (containers, digestors).⁷ This was done in collaboration with local universities and extension centers and led to some activism and advocacy beyond the individual farmer enterprises. In Chad, the PARSAT project, through the farmer field school approach, tested and disseminated approaches to integrated soil fertility management, including the use of animal manure, as well as a biological herbicide based on natron. This also led to initiatives

⁷Milpa is a traditional agricultural system in Mesoamerica based on maize, beans, and squash.

with local schools, where children participate in demonstrations on managing crops and soil in a more sustainable manner. In Nepal, the Integrated Landscape Management project promoted the preparation of organic pesticides and fertilizers, as well as improved goat shed preparation for healthier rearing and protection from wildlife attacks. UNEP's Climate Resilient Natural Capital project built skills for constructing low-cost check dams and conservation ponds and for planting beneficial trees. Some training activities also covered the gathering of nontimber forest products, such as butter tree fruits, Sichuan pepper, and turmeric, as income-generating activities. However, skill enhancement was generally geared to conservation objectives, rather than building a skills repertoire required for diverse subsistence livelihoods.

- **Combining traditional and contemporary technologies.** One example of this is initiatives undertaken in Mexico as part of SGP OPS7. As observed in Calpulálpam de Mendez (Oaxaca, Mexico), a partnership with the Universidad de la Sierra Juárez helped university students from several Indigenous communities use computer science, drones, and satellite imagery to build a database for monitoring soil, water, vegetation, and local wild fauna. Combined with traditional community mapping, this helped promote better understanding of natural resource trends. Students from the communities were able to address traditional assemblies and explain their work. Training kits and instructional games were designed to disseminate knowledge on the local flora and fauna through schools, creating a multiplier effect.
- **Training of local tour guides to enhance ecotourism services.** This was the case for the Conservation International-led Sustainable Landscapes project in Mexico. Members of local environmental tour cooperatives and enterprises were provided with training on the lagoon ecosystem (Lagunas de Chacahua, Oaxaca), local vegetation, fauna, opportunities for new itineraries, and environmental safety standards. This led to broadening the ecotourism

experiences offered to tourists, with richer environmental content (information on the evolution of the microclimate, wildlife, and ecosystem vulnerability). Again, this can generate a multiplier effect, as visitors become better informed.

Strengthening of social capital is another co-benefit identified by most projects and a pathway of change for local communities.

Empirically, this can be identified as (1) the strengthening of ties within a community or group and improving its governance of natural resources; and (2) creating and reinforcing relationships with external entities, such as other communities, local governments, local universities, technical support agencies, and public programs. There are elements of these in most projects. For instance, the RECONNECT project in Chad supported existing grassroots organizations, such as village surveillance committees (*comités villageois de surveillance*), the *instances locales d'orientation et de décision*, and canton development associations (*associations de développement du canton*). These are now active in advocating for support to local initiatives from municipal, cantonal, and subprefecture governments on natural resource conservation (vegetation, freshwater). They are also members of the committees that make decisions on project-financed initiatives to preserve local vegetation and promote income-generating activities.

Also in Chad, the PARSAT project evaluation noted an increase in competition for fodder resources in recent years between the communities of farmers (supported by the project) and the communities of pastoralists in the process of settling on the same territory, leading to cases of violent confrontation (IFAD 2023). In some villages, the project helped improve relationships between farmers and pastoralists by establishing contractual agreements (e.g., farmers taking livestock for fattening), although the evidence did not allow for generalization of this finding to the whole project area.

In Mexico, under the World Bank-led Sustainable Productive Landscapes project, Indigenous community

organizations were supported to improve their governance system and obtain certification of sustainable forest management. These communities are now engaging in planning an expanded range of economic activities to diversify revenue sources (e.g., ecotourism, payment for environmental services). Interestingly, more initiatives are led by younger community members, who are better educated. Similarly, the work done by the Conservation International-led Sustainable Landscapes project in certifying areas voluntarily designated for conservation in the Sierra Sur and coastal area of Oaxaca was the result of a thorough consultation with community members. The leaders had to facilitate several meetings with hundreds or even thousands of participants to arrive at a common understanding and decision. This was challenging, but eventually reinvigorated the bonding of community members. On the other hand, under the same project, while there were some advances in coffee-producing cooperatives adopting good soil management practices, there was little progress in strengthening cooperative governance, such as in Cafetaleros Unidos de la Costa.

In Nepal, projects built on and mobilized existing social networks, groups, associations, and cooperatives. For example, the Integrated Landscape Management project engaged a variety of local user groups and networks working in community forestry and the national park's buffer zone as well as students via school ecotourism clubs. The project also promoted multistakeholder groups, such as a federation of community forestry user groups, in planning and monitoring project-related activities.

In the area of economic production and income generation, projects (particularly those led by IFIs) have supported promising opportunities. Some of these opportunities are yet to be realized, and little quantitative evidence is available. Following are some pathways identified by the evaluation for the generation of economic benefits:

- **Increases in agricultural productivity and revenues.** Under the World Bank-led Sustainable Productive

Landscapes project in Mexico, biofertilizer production and application are estimated to have helped increase maize yields (from 0.8 ton/ha traditional yield to 1.2 tons/ha with biofertilizers), reduce tomato production costs by 48 percent, and improve carrot production (from 60 kg/bed to 120 kg/bed, with irrigation reduced from 32 to 19 applications, and growing time shortened from 125 to 76 days).⁸ Also in Mexico, the SGP OP7 midterm review noted, in Chiapas, an increase in cacao's farmgate price from about 57 pesos/kg to 90–130 pesos/kg, owing to better processing and marketing, thereby producing higher farmers' profits (Sanchez 2024).

In Chad, according to field observations, under the RECONNECT project, income-generating activities such as beekeeping, fishing, and basic food processing have seen improvements. Under traditional beekeeping, honey production per beehive per season was 7–8 kg. With the improved beehives and the restoration of local vegetation (better pollination), this is now 8–10 kg. Additionally, better pollination improves honey quality with an option to sell at CFAF 5,000/kg against CFAF 3,500/kg for average quality. An important qualification is that, by admission of the project team, the scale of activities (i.e., 370 micro-initiatives) is still very small, and much remains to be done to access markets and integrate with value chains.

Also in Chad, the impact assessment available for the PARSAT project estimated crop yield increases for sorghum, sesame, and groundnuts at 67 percent, 47 percent, and 87 percent, respectively, thanks to improved soil and crop management practices (IFAD 2023).

In Nepal, where projects were led by NGOs and UN entities, income-generating activities—such as

⁸Note that some of these changes may be linked to changes in the varieties grown, as indicated in field interviews.

processing and market linkage for nontimber forest products (UNEP-led Climate Resilient Natural Capital project), and ecotourism and leaf plate making (WWF-led Integrated Landscape Management project)—are at an earlier stage.

- **Diversification toward new revenue streams.** Examples of these have been in Mexico, including supporting artisanal handicraft with forest wood wastes (SGP) and ecotourism activities (e.g., in the lagoons of Chacahua under the Conservation International-led Sustainable Landscapes project). Note that, among case study countries, ecotourism initiatives were concentrated in Mexico. This may reflect the more advanced status of the industry in the country, and better transportation infrastructure and security conditions (at least in the state of Oaxaca).
- **Setting opportunities for possible future income increases.** This item is singled out because the evaluation observed cases in which the enabling environment has been set, but further investments are necessary to bring these conditions to fruition. One example is the certification of conservation areas in Mexico under the Sustainable Landscapes project, opening the door to sustainable forests through ecotourism, if eco-responsible investments are made. Another example, from the UNDP-led Climate Risk Management project in Chad, is the creation of demand for investment in off-season irrigated agriculture, which can help improve livelihoods. However, UNDP cannot provide capital for investments, and follow-up by another cooperation agency (such as an IFI) is required.
- **Supporting marketing and insertion in value chains.** This was not a strong focus of the projects, and it is not a traditional priority for conservation-focused interventions. In Chad, the PARSAT project's evaluation noted that, while there were gains in farm production, weak market integration hindered sustainable income gains (IFAD 2023). In Mexico, under the SGP, some elements of marketing support existed in the form of participation in handicraft fairs. Also

in Mexico, Conservation International's Sustainable Landscapes project provided technical support to ecotourism enterprises but did not help coffee cooperatives enhance their marketing strategies, such as in Cafetaleros Unidos de la Costa, Oaxaca. The guarantee schemes provided under the World Bank-led Sustainable Productive Landscapes project helped small and medium local enterprises access credit from public-supported financial enterprises but did not create strong incentives to seek funding from commercial banks.

Evidence of health and nutrition co-benefits is less detailed, indirect, and not robust, due to a lack of dedicated tracking. In the available evaluations, the reported nutrition improvements—for example, diversified diets in Chad's PARSAT project or improved price stability in the Sixth Operational Phase of the GEF Small Grants Programme in Mexico (SGP OP6; GEF ID 9167)—are based on interviews and perceptions rather than quantitative methods, limiting the ability to assess the projects' economic co-benefits. Regarding health, in Mexico and Nepal, water quality improvements (less sediments) have been mentioned as a result of a reduction of soil erosion. Also in Mexico, the claim of reduced exposure to chemicals, thanks to the use of biofertilizers, is plausible, but there are no objective corroborating measurements. In project documentation, there are also claims that the introduction of energy-efficient stoves or solar-based cooking/drying, as seen in projects like RECONNECT (Chad) or SGP OP7 (Mexico), could lead to less open-fire cooking—thus reducing smoke and pollution—but no data or estimates are available on the size of the effect.

Evidence of adverse effects

Limited information is available on adverse socioeconomic effects of projects. In Chad, reports on projects under the leadership of AfDB, UNDP, and the World Bank do not provide relevant information. The independent evaluation of IFAD's PARSAT project mentions issues

of conflicts between farmers and pastoralists, which some communities are trying to address; this was a risk that had received insufficient attention at design. In the case of the RECONNECT project, the abandonment of agricultural land for the conservation of ecological corridors is likely to have caused a reduction in the revenues of farms that encroached on areas protected for wildlife seasonal migration, although no estimate is available. For this reason, the RECONNECT project seeks to promote alternative sources of revenue in the relevant area, Mayo Kebbi West (medicinal plants, fruits, pollination and honey production, fuelwood, restoration of soil fertility). It is plausible to expect similar issues around the protected areas supported by other Agencies (notably the World Bank's Albiä project).

The Nepal case study did not present major cases of adverse socioeconomic effects for the GEF-supported projects under the responsibility of the Food and Agriculture Organization of the United Nations (FAO), IUCN, UNDP, UNEP, and WWF-US. However, in the project areas visited, there is some stress on local farmers and the general population due to conservation results. For instance, in Salyan, monkeys and wild boars, whose numbers have increased in recent years, damage crops and thereby become a threat to local people and livelihoods. In the Banke, Bardiya, and Kailali districts, there are frequent instances of wildlife attacks on domestic animals, crop depredation, and sometimes fatal wildlife attack on humans. Effort is ongoing from the UNEP-led Climate Resilient Natural Capital project to reduce wildlife attacks on livestock and crop damage.

In Mexico, the evaluation team did not observe major cases of detrimental effects of the same types as in Chad and Nepal. In the case of the areas voluntarily designated for conservation—such as the one visited in Santa María Huatulco (Oaxaca)—the promotion of ecotourism and conservation practices may have trade-off effects by restricting preexisting economic activities, such as conventional agriculture and livestock, raising the need for compensatory measures.

Socioeconomic co-benefits and social inclusion

Consistent with observations made at project design, the evaluation found more attention at implementation to marginalized groups in the projects in Chad and Mexico and less in Nepal. In Chad, the attention was to gender equality and smallholders; in Mexico, there was special attention to Indigenous communities (Mixtecos, Chinantecos, Zapotecos) in Oaxaca, while attention to gender equality varied within and between projects. Consider of youth was low, overall, with a few exceptions observed in Mexico. Differences in focus on specific marginalized groups were due to the lead Agency, its corporate mission, and its capacity and experience. These factors intertwined with cultural, social, and systemic norms and barriers on the ground.

In Mexico, SGP OP6 and OP7 operated primarily within Indigenous territories, integrating culturally relevant practices (e.g., the milpa system or community-based forestry) and promoting local ownership. Observations during the evaluation team's field visit also suggested that in the state of Oaxaca, interventions of the World Bank-led Sustainable Productive Landscapes project and the Conservation International-led Sustainable Landscapes project focused on Indigenous communities. While a significant share of the population in Oaxaca self-defines as Indigenous, the World Bank project made a specific effort to reach this population. According to figures provided by the project, 60 percent of the end users of this World Bank project would self-define as Indigenous, against 43 percent of the population in Oaxaca in general.

Although gender equality was an objective of most projects, progress toward its achievement was met with varying degrees of success. The PARSAT project in Chad exceeded its target, with women outnumbering men in farmer field schools. However, despite high rates of participation, women often remained absent from technical or field roles, as noted by the PARSAT evaluation (IFAD 2023). Also in Chad, according to the terminal evaluation

of the RECONNECT project, rates of women's participation varied across areas. While some local governance bodies saw up to 50 percent female participation, others were as low as 15 percent; it should, however, be noted that participation alone does not necessarily equate with empowerment. Additionally, the midterm review emphasized the lack of a gender focal point (IUCN 2022).

In Mexico, both SGP OP6 and OP7 saw significant and growing female inclusion, gradually moving beyond token numeric participation to active engagement in project design, decision-making, and leadership. Although the terminal evaluation for Mexico's Carbon Stocks project noted improvements in women's inclusion, it also cited concerns about local community technicians acting as gatekeepers, limiting the participation of women (Forbes 2019).

There was less specific focus on youth across the projects.

This was, in part, due to objective constraints, as in communities (e.g., Mexico) with high rates of emigration where the number of young people was limited; and in part due to limited imagination on how to make initiatives more interesting to younger generations. In Mexico, with GEF funding, the World Bank-led Sustainable Productive Landscapes project and the UNDP-led SGP dedicated some attention to leadership by young people in Indigenous communities (e.g., environmental certification, "horizon scanning" for new sources of revenues). SGP OP7 also engaged in activities to bring information technology, computer science, and drone technology to university students from Indigenous communities. In the Conservation and Sustainable Use of Biodiversity in Oaxaca and Chiapas project, ecotourism generated income but with disparities, as experienced guides received more attention than younger or female members of ecotourism cooperatives.

Very little information is available on interventions for people with disabilities. The terminal evaluation for SGP OP6 in Mexico mentions a case of support of a cooperative for

people with hearing/speech disabilities, with little detail (Morelli and Sanchez 2022).

Innovations supporting socioeconomic co-benefits

Rather than cutting-edge innovations, this evaluation found examples of improved practices and imaginative solutions at the local level, which are pertinent to the context.

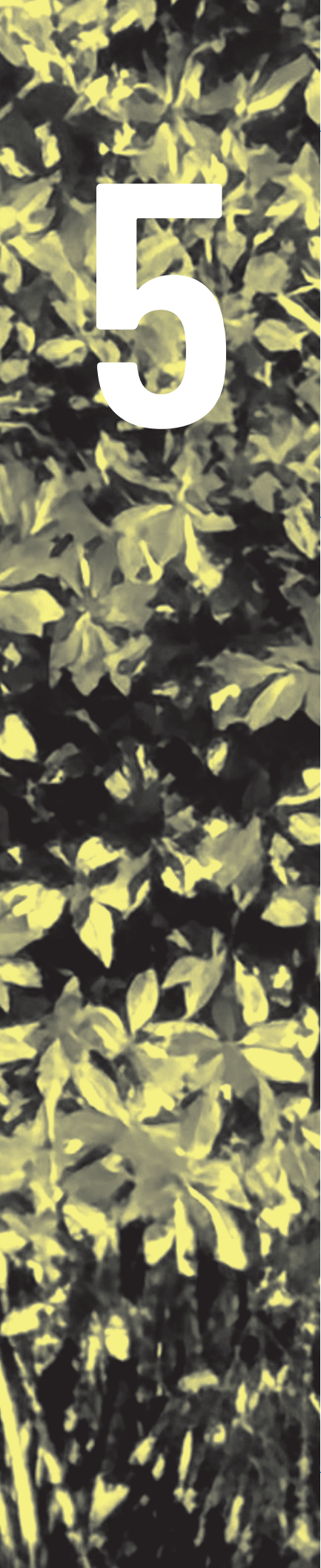
In the portfolio reviewed, there were few examples of cutting-edge technologies or the introduction of practices and approaches that were novel in absolute terms. The evaluation more frequently observed the following features, which contributed to the co-benefits:

- Support for eco-friendlier agricultural practices that are known elsewhere but rarely adopted in the project area before project interventions (e.g., biofertilizers)
- Revival of ancestral practices to manage vegetation (conservation of autochthonous plant varieties in Chad)
- Introduction of new services, such as the diversification of ecotourism offers under Conservation International's Sustainable Landscapes project in Mexico
- Inputs from professional designers to "refresh" traditional handicraft practices (Mexico, SGP)
- Application of modern technology (computer science, drones, web-connected photo traps) to track the evolution of natural resources, forest cover and canopy, soil, biodiversity, fauna and water), which is perhaps the closest to technological innovation, under the Mexico SGP.

Projects that have been able to support more imaginative solutions are those that have broadened their partnerships with civil society, universities, research and extension stations, and private entities and have paid attention to market demand.

4.4 Summary

- As a first marker of co-benefits, matching of GEF-funded projects with household wealth survey data suggests a positive correlation between the presence of a GEF-funded intervention and improvement in household welfare indicators.
- Earlier IEO evaluations and the three country case studies confirm that GEF-funded projects generate diverse socioeconomic co-benefits that often surpass initial expectations. While these benefits are well-documented qualitatively, there is limited quantification, leading to the risk of underrecognition.
- A key co-benefit is human capital development. Examples include having a more accurate, fact-based representation of climate change effects, acquiring specific skills (e.g., biofertilizers, crop management) and combining traditional approaches to natural resource conservation and new information technology applications.
- Strengthened social capital is another major co-benefit, notably the strengthening of bonds and governance mechanisms in communities and reinforcing ties with external entities to improve natural resource management. As well as being co-benefits in and of themselves, human and social capital are engines that generate additional co-benefits by driving changes in people's perspective, values, and commitment to preserve natural resources.
- Economic co-benefits have been realized by some projects (with special attention in IFI-led projects); other projects have created the enabling environment (certification of protected areas, certification of forest sustainability) to generate such co-benefits, with further investments required.
- Health and nutrition co-benefits remain underdocumented. Conservation efforts occasionally led to unintended socioeconomic drawbacks, such as reduced farm revenues in Chad due to land conservation and increased human-wildlife conflict in Nepal.
- In Chad and Mexico, projects were more effective in engaging marginalized groups—including Indigenous communities and women—than in Nepal, although results varied within and between projects. Youth engagement was uneven and received lower attention overall.
- Innovation supporting co-benefits primarily involved adapting existing technologies rather than introducing groundbreaking solutions (e.g., application of biofertilizers, revival of ancestral agricultural practices, diversification of ecotourism services, and integration of technology in environmental monitoring). Projects that formed partnerships with civil society, universities, and private stakeholders demonstrated the most imaginative solutions.



5

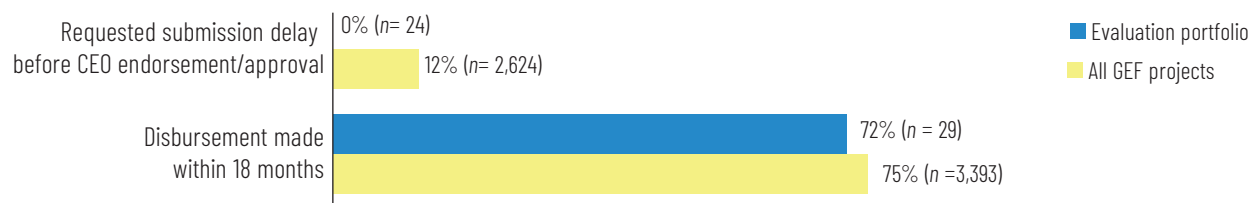
Efficiency and implications for co-benefits

This chapter highlights the factors affecting efficiency and, in turn, explains how efficiency can affect socioeconomic co-benefits. It begins with an overview of efficiency indicators in the results framework used by the GEF and the GEF IEO (for GEF-8, these are set out in GEF 2022b). These indicators can be considered proxies for efficiency at specific stages of a project cycle. Thereafter, drawing from interviews and country visits, the chapter identifies selected drivers of project efficiency. Finally, it discusses knowledge management as a factor that can affect efficiency, as well as the generation of co-benefits.

5.1 Efficiency and socioeconomic outcomes

According to standard efficiency indicators, the projects considered in the country case studies perform in line with the rest of the GEF portfolio, except timeliness in producing midterm reports. The analysis in this chapter compared the projects selected in the country case studies against a broader cohort of GEF-funded projects that were approved between 2008 and 2023, covering GEF-4 to GEF-8.

In the country case studies, the share of projects with first disbursements made 18 months after CEO endorsement is comparable with other GEF-funded projects. A majority (72 percent) of projects in the evaluation portfolio received their first disbursement within 18 months of CEO endorsement or approval, which is nearly identical to the share in the broader GEF portfolio (75 percent; [figure 5.1](#)). In addition, none of the projects in the evaluation portfolio submitted a notification of delayed submission or a request for extension before CEO endorsement or approval, compared with 12 percent in the rest of the GEF portfolio.

Figure 5.1 Efficiency at design and early implementation stages

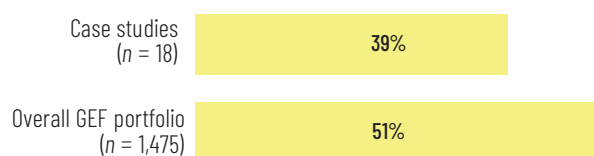
Source: GEF Portal data as of January 2025.

Note: Projects requesting delayed submissions comprise both full-size projects and medium-size projects requiring a two-step approval process.

Figure 5.2 shows that the median time from CEO endorsement to first disbursement is slightly lower in the evaluation portfolio (8.3 months) than in the GEF portfolio overall (8.8 months). However, country-level differences exist. Projects in Chad tend to experience significantly longer delays, with a median time of 12.9 months, whereas projects in Mexico have a shorter median time of 7.6 months.

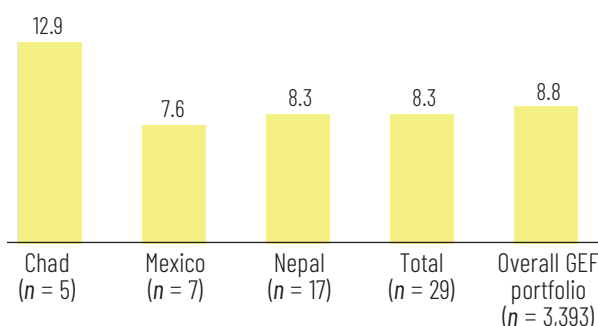
The projects considered in the country case studies experienced more delays in submitting midterm reviews compared to the GEF overall portfolio, reflecting implementation bottlenecks. Time between the endorsement of a project by the CEO and submission of a midterm review is another indicator identified in the GEF-8 Results Framework to measure speed of operations. This indicator captures

how quickly new projects are moving from the early stage of implementation to midterm review, which is mandatory for all full-size projects. Only 39 percent of the full-size projects in the evaluation portfolio submitted their midterm review within four years of CEO endorsement or approval, compared to approximately 50 percent of all GEF projects (figure 5.3). Additionally, 27 percent of full-size projects in the case study portfolio lack a reported midterm review date (against 18 percent for GEF overall). These data are likely to reflect slow implementation issues.¹

Figure 5.3 Percentage of full-size projects submitting midterm reviews within four years of approval

Source: GEF Portal data as of January 2025.

Terminal evaluations were completed in compliance with GEF requirements for about half of the case study projects. Out of 14 completed projects in the case study portfolio, only 6 (43 percent) had a terminal evaluation conducted

Figure 5.2 Median time from CEO endorsement/approval to first disbursement, in months

Source: GEF Portal data as of January 2025.

Note: Overall GEF portfolio is for GEF-4 to GEF-8.

¹This analysis considers only completed full-size projects and those at least four years old, ensuring comparability across project cohorts.

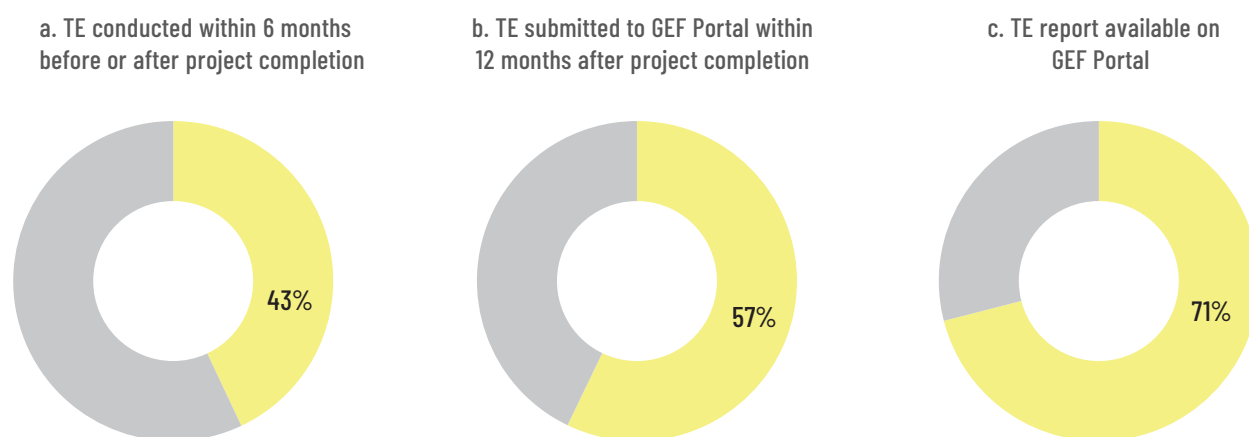
within six months before or after project completion (figure 5.4); the remaining 8 projects submitted their terminal evaluations within 12 months after project completion. However, direct comparisons with the wider GEF portfolio are challenging due to missing data. A considerable number of GEF projects outside the case study portfolio lack completion or terminal evaluation dates. Additionally, some projects report terminal evaluations occurring and/or terminal evaluation reports being submitted years before project completion, raising concerns about potential data entry errors. In terms of availability of terminal evaluation reports on the GEF Portal, reports are missing for four (29 percent) case study projects, even though they had been completed at least 12 months earlier. The share of missing reports is slightly lower among completed projects in the overall GEF portfolio: 23 percent.

Multiple cases of delays and slow implementation were observed during country visits, which also affect socio-economic co-benefits. For instance, in the case of the Conservation International-led Sustainable Landscapes project in Mexico, the project design encompassed a vast geographic area and a large number of

cooperatives to be supported (ecotourism, coffee production, fishery, etc.) with limited financial resources and little presence of the lead or executing agency in the territory. This caused delays and downward revisions in the number of grassroots organizations supported and the budget allocated to project subcomponents. Similar considerations were identified by the midterm review of the RECONNECT project in Chad. Ambitiously planned on an expansive territory, the project had limited staff availability and presence in the field, and it took time to establish cooperative relationships with local governments and grassroots organizations. Chad's Albiä project also experienced initial delays due to design complexity, such as having two NGOs as executing agencies, and 10 ministries on the steering committee. And finally, the AfDB-led Building Resilience project in Chad experienced delays in using GEF funding due to a long, drawn-out interaction with the GEF on the funding eligibility of certain activities.

However, there were cases where delays stemmed from situations mostly out of the control of the lead Agency and the GEF, such as changes in financial allocation from government agencies or changes in attribution

Figure 5.4 Measures of timeliness and availability of terminal evaluations among completed projects in the evaluation portfolio



Source: GEF Portal data as of January 2025.

Note: $n = 14$. TE = terminal evaluation.

of responsibilities under a newly elected government. In the case of the World Bank's Sustainable Productive Landscapes project, implementation was delayed for two years due to the government's freezing of several trust funds, which required a change in the national agency responsibility for the disbursement of project financing.

5.2 Impact of knowledge management arrangements on efficiency

This evaluation found that knowledge management had significant implications for efficiency. Limited exchanges and transfer of knowledge caused delays in implementation, because those in charge of designing and implementing projects had to learn or start afresh, advancing by trial and error, rather than drawing on established experience. Four levels of knowledge management are considered here.

Exchanging knowledge, either traditional or acquired technical knowledge, between groups and communities assisted by the projects. Promising practices were adopted by some projects—for example, the UNDP-led SGP organizing annual fairs and exchanges of experience and practices between representatives of communities and associations at the state or substate level, and the World Bank's Sustainable Productive Landscapes project building some communities of practice among producers of bio-fertilizers. However, this was not done systematically across the portfolio.

Monitoring and evaluation conducted at the project level. Socioeconomic co-benefits has been an area of limited emphasis in the GEF thus far. For corporate reporting purposes, individual projects need to report the number of persons considered to have experienced improvements in co-benefits (see, e.g., GEF 2022b). This requirement does not allow for more precise characterization of the co-benefits (type of benefit, size, characteristics of the main beneficiaries). A recent GEF

document on tracking and measuring co-benefits commits to giving more attention to these aspects in the future (GEF 2024).

Taking stock of and sharing successful and less successful experiences. Most ongoing projects have invested in websites that provide useful descriptive information on the main project characteristics and sometimes on the geographic location of project sites. There is less information of an analytical nature on successful cases (and the explanatory conditions and factors) as well as cases of failure. Terminal evaluations provide some inputs, but they are produced after closure. Making some information available closer to real time could benefit other projects.

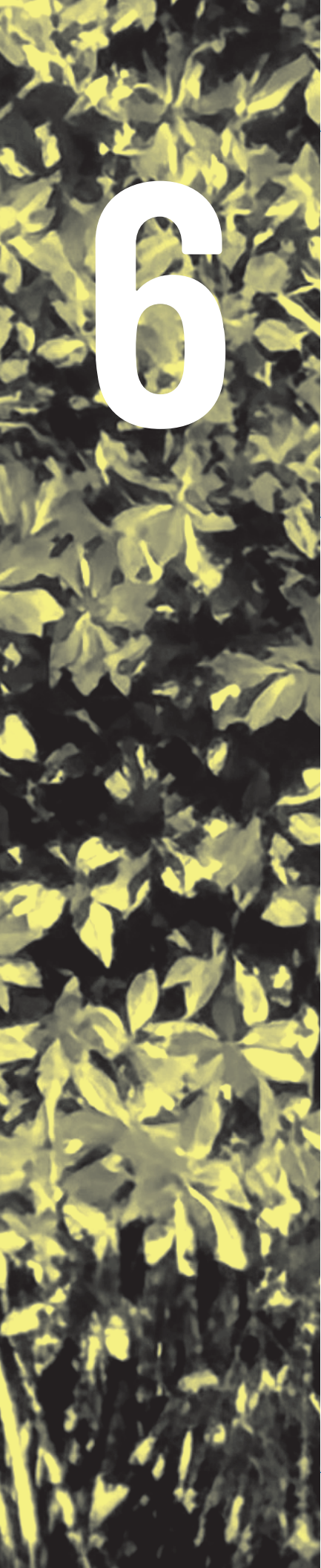
Exchanging knowledge and experiences between GEF-funded projects in the same country. As interviews with representatives from governments and GEF Agencies found, such exchanges have been limited, and no systematic exchanges between projects have been funded by the GEF. Some informal and ad hoc exchanges are reported between a few project coordinators who happen to know each other. However, there are no regular meetings between GEF-funded project representatives built upon a structured agenda of common interests, experiences, and problems. During interviews, project coordinators reported very similar implementation problems—for example, navigating through the intricacies of institutions and norms at the national and local levels, dealing with procurement and financial management requirements, and finding qualified specialists in specific thematic areas. The absence of a managed system to exchange and learn across project experiences implies that newly appointed project coordinators need to start anew, incurring a loss of time, information, and know-how, and also challenging the consolidation of results. To partially address this shortcoming, some Agency representatives suggested that an annual meeting at the national level with the participation of all GEF-funded project implementers/coordinators could be organized. This challenge is further discussed in [chapter 6](#).

5.3 Summary

- According to standard efficiency indicators, the projects considered in the country case studies perform in line with the rest of the GEF portfolio. The only exception to this is regarding delays in submitting midterm reviews, which in turn indicates delays in implementation.
- The majority of projects examined experienced delays, often due to the intricacies of national and local systems, the number of public institutions involved, overly ambitious geographic scope relative to limited implementation resources, time required to set up working relationships with national and

local institutions, changes in governments, and sometimes unforeseeable policy changes. The consequence of these was a reduction in the effective time available to support the generation of co-benefits.

- Knowledge management affects project implementation and the generation of co-benefits. The evaluation found, overall, little coordination at the field, project, and country portfolio levels for sharing successful practices and challenges among projects. This risks information loss and the need to begin afresh when a new project starts up or a new project coordinator comes on board, adding to startup and implementation delays.



6

Sustainability of socioeconomic co-benefits

This chapter looks at the likelihood that co-benefits will be sustained after the end of project-based support. While sustainability can only be fully assessed after project closure, this chapter discusses key factors that influence the continuation of streams of co-benefits in the years to come. The factors considered here are (1) ownership and collective action taken by communities on the ground and the role played by local institutions; (2) economic factors, such as profitability and access to markets; (3) policy and institutional factors; and (4) factors related to the project cycle and portfolio management at the country level.

6.1 Community ownership and collective action

Across the three country case studies, the communities and groups assisted by the projects displayed strong commitment to continue the activities after closure. Within the communities, the projects have helped members envision positive synergy between natural resource conservation and productive activities. For example, in the Sierra Norte of Oaxaca, the World Bank-led Sustainable Productive Landscapes project and the UNDP-led SGP have engaged with leaders of Indigenous communities. These communities were already aware of the importance of protecting natural resources and had engaged over the course of decades in eco-friendly economic activities. The projects have improved awareness of new opportunities for sustainable sources of revenues—for example, carbon sequestration markets, payment for environmental services, and additional nontimber forest products such as pine tree resin.

Along the same lines, the RECONNECT project in Chad provided training and equipment to traditional grassroots organizations—village surveillance committees (*comités villageois de surveillance*), local guidance and decision-making bodies (*instances locales d'orientation et de décision*), and canton development associations (*associations de*

développement du canton)—involved in the protection of vegetation or fisheries or the prevention of bushfires. During field interviews, representatives of these organizations proudly stated that they existed before the project and will continue to be present and to operate well after the closure of the project. The RECONNECT project also engaged local grassroots organizations, as well as municipalities and representatives from local technical agencies, in the selection of initiatives to be funded—a form of collaboration between civil society and public organizations. Similarly, the terminal evaluation of the PARSAT project states that the improved livelihoods and natural resource protection afforded by the project seemed more likely to continue where village committees owned the interventions and where local leadership was strong (e.g., community leaders intervening to mediate conflicts between farmers and pastoralists) (IFAD 2023).

In Nepal, communities generally owned project-supported activities. However, sustainability of co-benefits will depend on the nature of local institutions. The co-benefits are more likely to be sustained where local institutions are legally and socially grounded, and less so when local institutions are created instrumentally by the project and their existence is transitory (e.g., soil conservation groups that have no clear legal basis and incentives, or support structure beyond the project life cycle).

6.2 Enterprise profitability and access to markets

In general, helping ensure enterprise profitability has not been a major area of attention across the projects. In Mexico, for example, the ecotourism and cash crop cooperatives interviewed have benefited from technical support in diversifying their product offerings. However, the way in which they monitor the quantity and quality of output, prices, revenues, and costs is still basic, with no effective profit monitoring (e.g., the Lagunas de Chacahua

ecotourism cooperative in Oaxaca). In Chad (e.g., the RECONNECT project), economic activities such as honey production are not connected to markets (there is no labeling of products or proper packaging, as honey is sold in empty soft drink bottles). On a positive note, in Nepal, there are simple activities—such as cow-shed improvement and nontimber forest product processing and marketing—that are affordable, produce private benefits to participating households, and are more likely to continue after project closure.

According to their terminal evaluations, a recurring concern in Mexico's SGP OP6 and Carbon Stocks project was the uncertain or volatile nature of the niche product market (e.g., organic honey, ecotourism, carbon credits) (Morelli and Sanchez 2022; Sanchez 2024). Without stable buyers or adequate pricing, communities may struggle to obtain an economic return that is commensurate with their effort. Also in Mexico, under the World Bank-led Sustainable Productive Landscapes project, a future threat is the difficulty of successfully marketing the organic products in markets that still prefer cheaper vegetables from traditional methods.

There is a limit to what can be accomplished within a single project phase. A longer-term vision is often required, but not yet articulated, for product development and access to markets and value chains to ensure economic viability. Another threat to long-term sustainability is growing dependence on external support and international aid, when the activities could be profitable. Some examples of this risk were documented during the field visits. For example, a wood processing plant in Oaxaca, Mexico (Industrializadora Los Bosques de Pueblos Mancomunados), which offers a wide range of products and has a well-established retail system, continues to seek grants and subsidized credit from international cooperation and public programs, rather than fully competing in a market system. Similarly, coffee/cacao producer cooperatives established four decades ago rely on support from public programs rather than work on measures to enhance profitability.

6.3 Supporting institutions

Rather than changing policies or introducing new ones, projects mostly worked incrementally by putting policies into action. In the case study projects reviewed, the focus was

often on embedding environmental or climate adaptation priorities into existing development plans or sector strategies rather than generating new legislation ([table 6.1](#)). In Mexico, policy-related activities under the Carbon Stocks project focused on helping public agencies in charge of protected areas coordinate their work at the local level. The Conservation International-led Sustainable Landscapes project made two important achievements: (1) registration of areas voluntarily designated for conservation covering 120,000 ha to be managed by communities that can redistribute profit to their members; and (2) approval of a state-level ecological territorial master plan, a first step to supporting public conservation of natural areas and regulating development activities in these areas. Although the master plan is legally binding, its observance in such a large and socioculturally diverse territory will be challenging, particularly in relation to ecologically unsustainable productive practices, such as logging and urbanization. The master plan is expected to serve as a tool for the resolution of socio-environmental conflicts.

In Chad, the PARSAT project informed the preparation of a national climate adaptation strategy by funding national-level consultations, workshops, and stakeholder meetings, with a focus on agro-sylvo-pastoral practices. However, its main achievements involved strengthening local NGOs and community committees dedicated to water and soil infrastructure management. Sometimes policy gaps are rooted in deep political agendas: in Chad, the RECONNECT project helped integrate natural resource management into cantonal development plans. However, the province of Mayo-Kebbi West, where it operates, lacks a land use plan, which makes it difficult to enforce protected area status when farmers try to encroach for growing cereals. Also in Chad, the Albiä project had to work to update Law 14/98 on

sustainable management of natural resources, as the original formulation would not leave space for the envisaged socioeconomic development activities.

An interesting observation comes from the Nepal case study: interventions made directly through national agencies—such as national parks, forestry authorities, or local governments—present a mixed case of sustainability. The national parks and forestry authorities operated as top-down bureaucratic structures, and the chance of continuing work depends on the willingness of higher authorities to internalize the interventions. Local governments, on the other hand, had budget allocation powers of their own and may be able to fund and support some of the required interventions beyond the project.

6.4 Project cycle and portfolio management arrangements

A general threat to sustainability is the short duration of project support. Although on paper, project duration may be slated for up to five years, activities in a given community typically do not last more than two or three. This is due to slow implementation during the first years (as noted in [chapter 5](#)'s discussion of efficiency). The consequence is that projects close when co-benefits are just emerging and no consolidation strategy has yet been enacted. The case studies suggest that opportunities exist for longer-term sustainability, but are not pursued systematically. Opportunities include the following:

- Intentional sequencing between projects funded by the GEF (e.g., a new project focusing on ecotourism can build on the previous registration of protected areas)
- Sequencing between a GEF-funded project and an intervention funded by other international agencies (so the GEF-funded pilot can be scaled up and expanded)
- Synergies between GEF-funded projects and national or local programs that foster small-scale

Table 6.1 Policy and institutional interventions of GEF-funded projects to bolster sustainability

Project	Policy/institutional focus
Chad: Enhancing the Resilience of the Agricultural Ecosystem (PARSAT) (International Fund for Agricultural Development)	- Contributed to consultation on Chad's national climate adaptation strategy - Enhanced capacities of local nongovernmental organizations on farmer field schools and literacy/nutrition trainings - Formed village committees for managing soil and water conservation structure, but received limited support
Chad: Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits (RECONNECT) (International Union for Conservation of Nature)	- Supported nine cantons in the province of Mayo-Kebbi Ouest in the revision of their local development plans - Provided training to grassroots organizations and logistical support to local decision-making bodies
Chad: Albiā Local Development and Adaptation Project (World Bank)	Revised and updated legislation on sustainable natural resource management
Mexico: Sixth Operational Phase of the GEF Small Grants Programme (United Nations Development Programme)	Supported the designation of 900 ha of fishing refuges in Campeche
Mexico: Seventh Operational Phase of the GEF Small Grants Programme (United Nations Development Programme)	- Updated local norms within <i>ejidos</i> or Indigenous communities (e.g., on milpa systems, forest use, and dune restoration) - Focus on community-led and local-level initiatives
Mexico: Maintaining and Increasing Carbon Stocks in Agro-silvopastoral System in Rural Communities of the Selva Zoque-Sumidero Canyon Complex as a Climate Change Mitigation Strategy (Conservation International)	- Trained local protected area agency staff on sustainable forest management - Training results rely on staff continuity of government partners
Mexico: Conservation and Sustainable Use of Biological Diversity in Priority Landscapes of Oaxaca and Chiapas (Conservation International)	- Registration of areas voluntarily designated for conservation - Preparation of an ecological territorial master plan for Oaxaca

Source: Project documents.

private investment (e.g., guarantee schemes to facilitate access to credit).

In many of the projects examined, co-benefits are at an initial phase and there is a need for further consolidation. As noted in the examples above, in many cases co-benefits have appeared toward the end of a project's life cycle and are in need of consolidation. There are also cases in which the conditions for generating co-benefits have been set, but the co-benefits may not be achieved if there is no follow-up. For example, in the Climate Risks Management project in Chad, end users now have better information on climate change effects, thanks to weather stations and radio programs. They want to

invest more on irrigated crops during the dry season (when floods recede and do not damage crops) and are interested in growing sugarcane instead of rice during the rainy season, as it has a longer growing season and can survive the flood period. However, this change in cropping seasonality requires investments (wells, pumps, stone barriers) that UNDP cannot finance as it is not part of its mandate and business model; however, other international organizations such as AfDB, FAO, IFAD, and the World Bank could provide support. This calls for concerted action between the GEF, the GEF Agencies, and the national government's focal point to provide follow-up support.

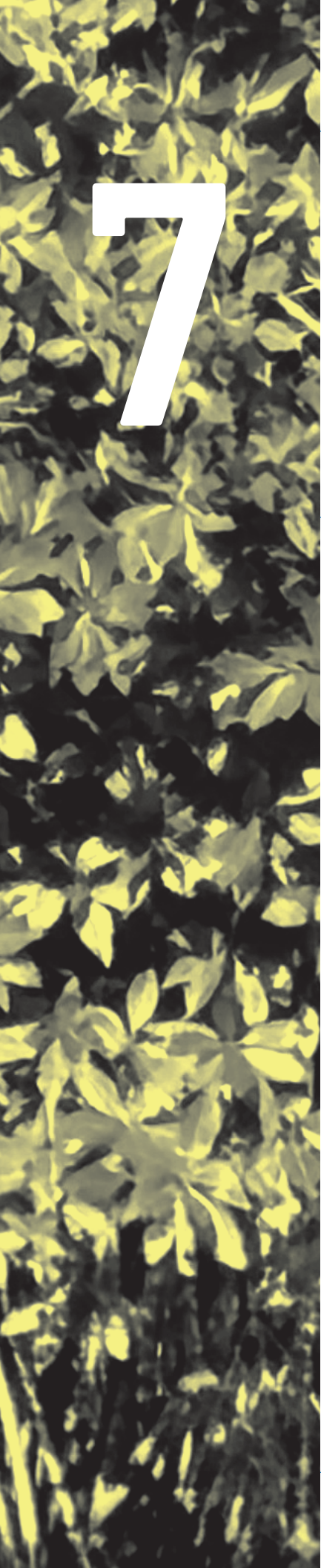
In Mexico, the Conservation International-led Sustainable Landscapes project successfully helped Indigenous communities register six areas voluntarily designated for conservation. In addition to protecting these areas from deforestation and housing construction, the registration opens opportunities for investment in ecotourism, whereby local business can thrive while conserving forest cover. However, as pointed out by local key informants and staff from regulatory agencies, financial and technical support from public institutions and international agencies will be crucial to ensure that financing is provided to local enterprises on affordable terms and that the investments follow stringent environmental standards.

There were no systematic arrangements to promote sequencing and synergy between GEF-funded projects and initiatives funded by development cooperation. The GEF has not provided such guidance, given that it has no in-country presence and—at least in the three country cases studied—conducts very few country-level interactions or project visits during implementation.¹ Similarly, the governmental operational focal point did not organize regular (e.g., annual) meetings of coordinators of ongoing projects funded by the GEF around a structured agenda of common interests and issues. As argued by several project coordinators and staff members, this could have helped identify and address common implementation problems, share knowledge, and devise opportunities for the consolidation of project results and co-benefits. The Country Engagement Strategy of the GEF aims to promote a stronger role for national partners (GEF 2022a). If concrete actions are put in place, they could also help realize the synergies that are needed for continuation of co-benefits.

¹Subregional events, such as expanded constituency workshops, bring together stakeholders from government, civil society, development partners, and international organizations. However, they are not focused on a specific country portfolio.

6.5 Summary

- Motivation and engagement at the community and grassroots levels support the postproject continuation of initiatives where natural resource conservation aligns with co-benefits.
- Enterprise profitability and market access have not been primary focal areas. Many economic activities remain disconnected from markets, lacking branding, quality control, and financial planning. In some cases, enterprises have become reliant on external aid rather than working toward full market integration.
- Projects have mostly worked within existing policy frameworks and sought to strengthen local institutions and integrate environmental priorities into development plans. While some progress has been made, political turnover and shifting government priorities may undermine these efforts.
- A common issue across projects is the short duration of support in individual communities, groups, or cooperatives, which often ends before co-benefits are fully consolidated. Many projects lack a strategy to ensure follow-up support.
- The absence of the GEF during implementation, as well as lack of clarity on the precise role of the government, does not support project consolidation. GEF-funded projects could offer mutual support. Interventions by other agencies can also help consolidate project gains, but this needs to be coordinated. No systematic arrangements for this were observed.
- According to several stakeholders, structured exchanges between project coordinators at the country level, facilitated by the operational focal point, could have contributed to enhancing learning between projects, synergy between GEF-funded projects, opportunities to receive further support from other international cooperation agencies, and long-term sustainability prospects. However, these were not undertaken systematically.



7

Conclusions and recommendations

7.1 Conclusions

Co-benefits are defined as additional impacts of a policy or intervention, beyond its primary objectives. In the case of natural resource protection and climate change adaptation, co-benefits can include, among others, improved incomes, livelihoods, health, and employment; gender equality; market development; and better access to services.

Two distinct project paradigms can be identified in GEF-funded projects: projects that are rooted in a conservationist approach, and projects aligned with a rural sustainable development paradigm. The conservationist approach, commonly associated with projects led by UN entities or NGOs, prioritizes global environmental benefits, with socioeconomic co-benefits treated as secondary. In contrast, the rural sustainable development paradigm—typically represented by projects led by IFIs—places greater emphasis on socioeconomic outcomes such as income generation and job creation, while recognizing the importance of natural resource protection. Projects under this second rubric demonstrate a stronger focus on production and economic co-benefits, supported by the IFIs' capacity to finance infrastructure and productive asset investments.

This evaluation found ample evidence that GEF-funded projects are associated with socioeconomic co-benefits, where environmental and development outcomes are achieved together and are mutually reinforcing. The co-benefits are diverse, with the most common being the strengthening of human and social capital. Economic co-benefits typically emerge by the time of project completion. Geospatial analysis—matching project site coordinates with geolocalized household surveys—reveals a small but positive and statistically significant correlation between the presence of GEF-funded interventions and improvements in household income and asset indicators.

Complementing the above analysis, the evaluation conducted country case studies in Chad, Mexico, and Nepal, which corroborated the evidence on socioeconomic co-benefits. The most frequently observed outcomes across all three countries were the strengthening of human capital and social capital. In terms of human capital, a common result was the upgrading or learning of new skills in environmentally sustainable agricultural and forest management practices—such as reducing chemical inputs, preserving soil fertility, managing water resources, and protecting and restoring native plant species. In Chad, training sessions and dedicated radio programs increased farmers' awareness of changes in seasonal rain patterns and the need to adapt their crop calendars to cope with emerging risks, such as widespread flooding. In Mexico, the integration of traditional Indigenous community knowledge on forest management with modern tools, such as drone technology, satellite imagery, and artificial intelligence, revitalized local youth's interest in primary production activities, including sustainable logging and nontimber forest products. This integration also improved awareness of new income-generation opportunities, such as ecotourism, payment for environmental services schemes, and carbon sequestration.

In terms of social capital, project engagement with communities in Chad, Mexico, and Nepal helped rein-vigorate existing grassroots organizations in charge of protecting forests, local vegetation, and freshwater resources. These efforts also empowered women and youth to voice their needs and interests in traditional assemblies. Further, the projects helped forge partnerships between local communities and universities, extension centers, local governments, and public programs, supporting efforts in natural resource conservation and climate change adaptation.

With respect to economic production and income generation, several co-benefits were observed, including positive spillover effects on soil fertility and agricultural productivity, as well as opportunities for income

diversification (e.g., ecotourism, sustainable timber and nontimber forest products). Other socioeconomic co-benefits, such as improvements in health and nutrition, were also reported. However, evidence in these areas remains largely anecdotal, as limited data collection has been conducted by the projects to date.

The quality of project design is a key enabling factor for generating co-benefits.

Despite growing attention to socioeconomic co-benefits in project cohorts since GEF-5, many project designs are based more on assumptions or general intentions than on a clearly articulated pathway for achieving them. While the evolution in design reflects increased awareness of co-benefits, as a motivation and incentive for households and communities to take collective action to protect natural resources, many projects still lack a defined chain or sequence of actions and initiatives to deliver them. A robust conceptualization of how specific interventions would lead to co-benefits is not always explicit at design.

Project designs do not always identify short-term detrimental effects of natural resource conservation that may reduce incentives for individuals and communities to cooperate.

Common examples include restrictions on access to forests or fisheries, or crop damage caused by wildlife. Such detrimental effects can be effectively managed if they are identified early and addressed proactively. It is important, however, to inform the communities of these potential impacts and identify solutions jointly.

Supporting existing groups, local initiatives, local institutions, and communities is an effective way to generate co-benefits.

Rather than creating initiatives ex nihilo, most GEF-funded projects focus on enhancing and strengthening the quality of existing efforts, often initiated by previous NGO projects, international cooperation agencies, or public programs. This is a realistic approach, considering that the typical project support window in communities is often not longer than two or three years, with limited financial resources. Projects' efforts to plan activities in a participatory manner

with local communities—as well as with public sector actors such as municipal, subdistrict, and subprefecture administrations—or a university extension program can lead to the creation of increased co-benefits.

At the time of project closure, co-benefits are often still in their early stages and geographically limited. They require continued support and further consolidation to reach scale. While a single project phase can catalyze the emergence of co-benefits, it is generally insufficient to sustain or expand them. A key constraint to sustainability is the short duration of project support to a given community, enterprise, or initiative, leaving little time to provide technical guidance or financial support to ensure continued benefit flows. The profitability of cooperatives, enterprises, and other productive initiatives has not received strong attention by the projects, even in those led by IFIs. Many of these economic activities remain disconnected from markets and value chains; in some cases, enterprises or cooperatives have become reliant on external aid rather than pursuing long-term, market-based sustainability.

The sustainability of co-benefits is also hindered by incomplete coordination in managing the GEF portfolio at the country level. Opportunities for synergy across projects are not systematically pursued. Potential synergies include (1) two (or more) GEF-funded projects operating concurrently in the same area and reinforcing each other; (2) a GEF-funded project building on and supporting communities assisted by a previous GEF-funded project; and (3) a project funded by an external agency scaling up the results of a previous GEF-funded project. These types of coordination could extend the duration of support and build on the achievements beyond a single project phase. However, such synergies require a deliberate and coordinated strategy among development partners—an approach that was not consistently observed.

The GEF's lack of country presence limits its ability to effectively support ongoing engagement and coordination to sustain co-benefit streams. While the GEF

Agencies and the national executing agencies could support the synergy opportunities outlined above, such efforts are not being widely undertaken, and no entity is clearly assigned responsibility for doing so. The GEF's Country Engagement Strategy aims to strengthen collaboration between the GEF and its national partners, granting countries a more prominent role in decision-making (GEF 2022a). National governments—and particularly the operational focal points—hold the convening power to promote coordination in support of sustained co-benefits. For example, they could promote knowledge sharing and collaboration across projects through regular workshops or among GEF-funded project teams. However, such coordination mechanisms are not consistently implemented.

Tracking socioeconomic co-benefits is an important enabler for project managers and end users. Until recently, limited attention was given to this aspect during project design and implementation. As a result, there is a risk that donors and partners might undervalue the full range of results and impacts generated by GEF-funded projects. Simply estimating the number of beneficiaries receiving co-benefits, as is done at present, does not capture the breadth or depth of project achievements. A recent GEF document on monitoring co-benefits proposes a broader set of approaches and tools for assessing these co-benefits (GEF 2024). If consistently adopted by lead and executing agencies in countries, these tools could enable more accurate measurement of co-benefits and provide a clearer understanding of the impacts of GEF-funded interventions on development.

7.2 Recommendations

Recommendation 1: Clearly define pathways for generating socioeconomic co-benefits in project design, while identifying potential risks and mitigation measures. The GEF Secretariat should set clear standards requiring project proposals to explicitly articulate the expected co-benefits within the project's theory of change. Proposals should also anticipate potential

negative impacts, outline compensatory strategies, and define measures to ensure equitable distribution—paying particular attention to gender equality and inclusion of marginalized and low-income groups—as part of the quality assurance process. This is particularly important when the co-benefits serve as key incentives for natural resource conservation.

Recommendation 2: Promote the sustainability of co-benefits by strengthening country portfolio coordination, with a central role for the operational focal point and key national stakeholders. In line with the GEF Country Engagement Strategy, the GEF Secretariat should empower and require country operational focal points to convene regular exchanges—such as an annual workshop—with GEF Agencies, executing agencies, and other partners. These forums would serve to identify implementation challenges, share good practices, and highlight innovative approaches that enhance both global environmental benefits and socioeconomic co-benefits. Such coordination would also support

the consolidation and scaling of results through better sequencing and synergy between GEF-funded and other development initiatives. The GEF Secretariat should explore further opportunities for deeper country engagement to capture and manage knowledge from portfolio implementation.

Recommendation 3: Track co-benefits during project implementation and at completion. The GEF Secretariat should provide guidance to the Agencies and partners on indicators and methods to assess the nature, scale, and reach of co-benefits, and track and report on the follow-up done by projects and Agencies.

Evaluation portfolio

Table A.1 Case studies

GEF ID	Project title	Agency	Focal area	GEF period	Status
Chad					
5376	Enhancing the Resilience of the Agricultural Ecosystems	IFAD	CC	GEF-5	UI
8001	Community-based Climate Risks Management in Chad	UNDP	CC	GEF-6	UI
9050	Building Resilience for Food Security and Nutrition in Chad's Rural Communities	AfDB	MF	GEF-6	UI
9417	Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits	IUCN	MF	GEF-6	UI
10315	Chad ALBIA—Local Development and Adaptation Project	WB	BD	GEF-7	UI
11459	Promoting Integrated Natural Resources Management in Support of GGW in Chad (PINAMAC)	UNEP	MF	GEF-8	PIF cleared
11550	Strengthening the resilience of smallholder farmers and ecosystems to the effects of climate change (STRADAP)	IFAD	CC	GEF-8	Council approved
Mexico					
5751	Maintaining and Increasing Carbon Stocks in Agro-silvopastoral System in Rural Communities of the Selva Zoque-Sumidero Canyon Complex as a Climate Change Mitigation Strategy	CI	CC	GEF-5	Closed
9167	Sixth Operational Phase of the GEF Small Grants Programme in Mexico	UNDP	MF	GEF-6	Project Implemented
9445	Conservation and Sustainable Use of Biological Diversity in Priority Landscapes of Oaxaca and Chiapas	CI	BD	GEF-6	UI
9555	Sustainable Productive Landscapes	WB	MF	GEF-6	UI
10504	Seventh Operational Phase of the GEF Small Grants Programme in Mexico	UNDP	MF	GEF-7	UI
10869	Promoting sustainability in the agave-mezcal value chain through restoration and integrated management of biocultural landscapes in Oaxaca	UNEP	MF	GEF-7	UI
11156	From conflict to coexistence, safeguarding wildlife corridors in Mexico for sustainable development	WWF-US	MF	GEF-8	PIF cleared

GEF ID	Project title	Agency	Focal area	GEF period	Status
11274	Mexico Mesoamerica Forest IP Project: Securing benefits for the well-being of local communities and the ecosystems of the Maya Forest	IUCN	MF	GEF-8	Under revision by Agency
Nepal					
5203	Catalysing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal	UNEP	CC	GEF-5	UI
5596	Sustainable Land Management in the Churia Range	WWF	LD	GEF-5	Closed
6989	Developing Climate Resilient Livelihoods in the Vulnerable Watershed in Nepal	UNDP	CC	GEF-6	UI
8009	Ecosystem-Based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal	UNEP	CC	GEF-6	UI
10469	Restoring the degraded watershed and livelihoods of Lakhandei river basin through Sustainable Land Management	IUCN	LD	GEF-7	UI
3412	National Adaptation Programme of Action to Climate Change	UNDP	CC	GEF-4	Closed
3573	Environmentally Sound Management and Disposal of POPs Pesticides and PCBs	UNIDO	CW	GEF-4	Closed
4130	Kathmandu Sustainable Urban Transport (SUT) Project	ADB	CC	GEF-4	Closed
4345	Renewable Energy for Rural Livelihood (RERL)	UNDP	CC	GEF-5	Closed
4464	Integrating Traditional Crop Genetic Diversity into Technology Using a Portfolio Approach to Buffer Against Unpredictable Environmental Change in the Nepal Himalayas	UNEP	BD	GEF-5	
4551	Community Based Flood and Glacial Lake Outburst Risk Reduction	UNDP	CC	GEF-5	Closed
5111	Reducing Vulnerability and Increasing Adaptive Capacity to Respond to Impacts of Climate Change and Variability for Sustainable Livelihoods in Agriculture Sector in Nepal	FAO	CC	GEF-5	Closed
5224	Enabling Activities to Review and Update the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs)	UNIDO	CW	GEF-5	Closed
9152	Minamata Initial Assessment in Nepal	UNIDO	CW	GEF-6	Closed
9352	Strengthening Capacities for Implementation of the Nagoya Protocol in Nepal	IUCN	BD	GEF-6	Closed
9437	Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors	WWF-US	MF	GEF-6	UI
10381	Enhancing capacity for sustainable management of forests, land and biodiversity in the Eastern Hills (ECSM FoLaBi EH)	FAO	MF	GEF-7	CEO endorsed

Source: GEF Portal data as of January 2025.

Note: Agency: ADB = Asian Development Bank, AfDB = African Development Bank, CI = Conservation International, FAO = Food and Agriculture Organization of the United Nations, IFAD = International Fund for Agricultural Development, IUCN = International Union for Conservation of Nature, UNDP = United Nations Development Programme, UNEP = United Nations Environment Programme, UNIDO = United Nations Industrial Development Organization, WB = World Bank, WWF-US = World Wildlife Fund-US; focal area: BD = biodiversity, CC = climate change, CW = chemicals and waste, LD = land degradation, MF = multifocal; status: PIF = project identification form, UI = under implementation.

Table A.2 Geospatial analysis

GEF ID	Project title	Country
3287	Community Based Adaptation to Climate Change through Coastal Afforestation	Bangladesh
4459	Development of Sustainable Renewable Energy Power Generation (SREPGen)	Bangladesh
4700	Integrating Community-based Adaptation into Afforestation and Reforestation Programmes in Bangladesh	Bangladesh
4858	Environmentally-sound Development of the Power Sector with the Final Disposal of PCBs	Bangladesh
4931	ASTUD: Greater Dhaka Sustainable Urban Transport Corridor Project	Bangladesh
5099	Expanding the PA System to Incorporate Important Aquatic Ecosystems	Bangladesh
5456	Ecosystem-based Approaches to Adaptation (EbA) in the Drought-prone Barind Tract and Haor “Wetland” Area	Bangladesh
5636	Community-based Climate Resilient Fisheries and Aquaculture Development in Bangladesh	Bangladesh
9154	Managing the Human-wildlife Interface to Sustain the Flow of Agro-ecosystem Services and Prevent Illegal Wildlife Trafficking in the Kgalagadi and Ghanzi Drylands	Botswana
4751	Mainstreaming SLM in Rangeland Areas of Ngamiland District Productive Landscapes for Improved livelihoods	Botswana
10255	Integrated sustainable and adaptive management of natural resources to support land degradation neutrality and livelihoods in the Miombo-Mopane landscapes of North-east Botswana	Botswana
4544	Improved Management Effectiveness of the Chobe-Kwando-Linyanti Matrix of Protected Areas	Botswana
5789	Using SLM to Improve the Integrity of the Makgadikgadi Ecosystem and to Secure the Livelihoods of Rangeland Dependent Communities	Botswana
4908	GGW: Agriculture Production Support Project (with Sustainable Land and Water Management)	Chad
5795	Promoting Energy Efficient Cook Stoves in Micro and Small-scale Food Processing Industries	Chad
9417	Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits—RECONNECT	Chad
10315	Chad ALBIA—Local Development and Adaptation Project	Chad
4382	Fifth Operational Phase of the GEF Small Grants Programme	Costa Rica
4836	Conservation, Sustainable Use of Biodiversity, and Maintenance of Ecosystem Services of Internationally Important Protected Wetlands	Costa Rica
5838	Sustainable Urban Mobility Program for San Jose	Costa Rica
6945	Strengthening Capacities of Rural Aqueduct Associations’ (ASADAS) to Address Climate Change Risks in Water Stressed Communities of Northern Costa Rica	Costa Rica
9416	Conserving Biodiversity through Sustainable Management in Production Landscapes in Costa Rica	Costa Rica
621	Biodiversity and Protected Area Management Pilot Project for the Virachey National Park	Cambodia
1043	Establishing Conservation Areas Landscape Management (CALM) in the Northern Plains	Cambodia
1086	Developing an Integrated Protected Area System for the Cardamom Mountains	Cambodia
1183	Tonle Sap Conservation Project	Cambodia
3635	SFM Strengthening Sustainable Forest Management and the Development of Bio-energy Markets to Promote Environmental Sustainability and to Reduce Green House Gas Emissions in Cambodia	Cambodia
3890	Vulnerability Assessment and Adaptation Programme for Climate Change in the Coastal Zone of Cambodia Considering Livelihood Improvement and Ecosystems	Cambodia

GEF ID	Project title	Country
4434	Strengthening the Adaptive Capacity and Resilience of Rural Communities Using Micro Watershed Approaches to Climate Change and Variability to Attain Sustainable Food Security	Cambodia
4905	Strengthening National Biodiversity and Forest Carbon Stock Conservation through Landscape-based Collaborative Management of Cambodia's Protected Area System as Demonstrated in the Eastern Plains Landscape (CAMPAS Project)	Cambodia
4945	Collaborative Management for Watershed and Ecosystem Service Protection and Rehabilitation in the Cardamom Mountains, Upper Prek Thnot River Basin	Cambodia
5318	Strengthening Climate Information and Early Warning Systems in Cambodia to Support Climate Resilient Development and Adaptation to Climate Change	Cambodia
5421	Reduction of GHG Emission through Promotion of Commercial Biogas Plants	Cambodia
9640	Low-carbon Development for Productivity and Climate Change Mitigation through the Transfer of Environmentally Sound Technology (TEST) Methodology	Cambodia
9781	Integrated Natural Resource Management (INRM) in the Productive, Natural and Forested Landscape of Northern Region of Cambodia	Cambodia
10177	Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region	Cambodia
10483	Additional Financing for the Cambodia Sustainable Landscape and Ecotourism Project	Cambodia
10184	LDN Target-Setting and Restoration of Degraded Landscapes in Western Andes and Coastal areas	Ecuador
3717	SFM Sustainable Management of Biodiversity and Water Resources in the Ibarra-San Lorenzo Corridor	Ecuador
5534	Conservation of Ecuadorian Amphibian Diversity and Sustainable Use of its Genetic Resources	Ecuador
4731	Advancing Landscape Approaches in Ecuador's National Protected Area System to Improve Conservation of Globally Endangered Wildlife	Ecuador
4375	Fifth Operational Phase of the GEF Small Grants Program in Ecuador	Ecuador
4774	Conservation and Sustainable Use of Biodiversity, Forests, Soil and Water to Achieve the Good Living (Buen Vivir / Sumac Kasay) in the Napo Province	Ecuador
10147	Seventh Operational Phase of the GEF Small Grants Program in Ecuador	Ecuador
3266	Management of Chimborazo's Natural Resources	Ecuador
4770	Integrated Management of Marine and Coastal Areas of High Value for Biodiversity in Continental Ecuador	Ecuador
9369	Implementation of the Strategic Plan of Ecuador Mainland Marine and Coastal Protected Areas Network	Ecuador
3024	SLEM/CPP: Sustainable Participatory Management of Natural Resources to Promote Ecosystem Health and Resilience in the Thar Desert Ecosystem	India
3472	SLEM/CPP: Integrated Land Use Management to Combat Land Degradation in Madja Pradesh	India
3941	IND-BD Mainstreaming Coastal and Marine Biodiversity Conservation into Production Sectors in the Malvan Coast, Maharashtra State	India
4215	Low Carbon Campaign for Commonwealth Games 2010 Delhi	India
4921	Efficient and Sustainable City Bus Services	India
5132	Integrated Management of Wetland Biodiversity and Ecosystems Services (IMWBES)	India
5137	Mainstreaming Agrobiodiversity Conservation and Utilization in Agricultural Sector to Ensure Ecosystem Services and Reduce Vulnerability	India

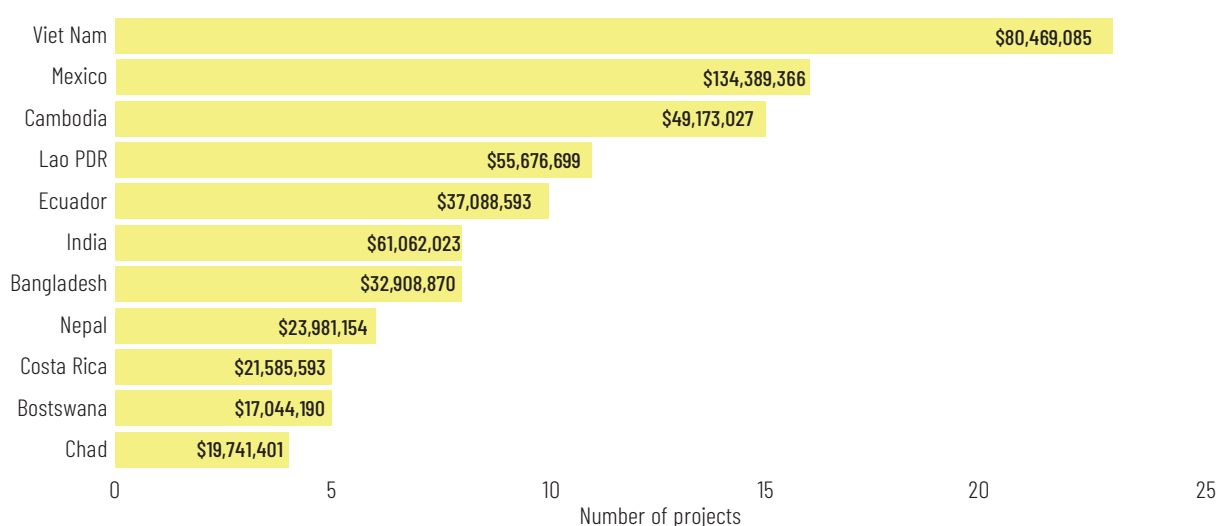
GEF ID	Project title	Country
9243	Green-Ag: Transforming Indian Agriculture for Global Environmental Benefits and the Conservation of Critical Biodiversity and Forest Landscapes	India 4034
4554	Effective Governance for Small Scale Rural Infrastructure and Disaster Preparedness in a Changing Climate	Lao PDR
4650	GMS-FBP: Strengthening Protection and Management Effectiveness for Wildlife and Protected Areas	Lao PDR
5462	Strengthening Agro-climatic Monitoring and Information Systems to Improve Adaptation to Climate Change and Food Security in Lao PDR	Lao PDR
5743	Reducing of Green House Gas Emissions in the Industrial Sector through Pelletization Technology	Lao PDR
6940	Sustainable Forest and Land Management in the Dry Dipterocarp Forest Ecosystems of Southern Lao PDR	Lao PDR
10187	Climate Smart Agriculture alternatives for upland production systems in Lao PDR	Lao PDR
10499	Lao PDR Landscapes and Livelihoods Project	Lao PDR
10514	Integrated Water Resource Management and Ecosystem-based Adaptation (EbA) in the Xe Bang Hieng River Basin and Luang Prabang City	Lao PDR
78	Wildlife and Protected Areas Conservation	Lao PDR
3873	Developing and Demonstrating Replicable Protected Area Management Models at Nam Et–Phou Louey National Protected Area	Lao PDR
2654	Consolidation of the Protected Area System (SINAP II)—Third Tranche	Mexico
2860	Regional Framework for Sustainable Use of the Rio Bravo	Mexico
2896	Sacred Orchids of Chiapas: Cultural and Religious Values in Conservation	Mexico
3142	Grid-connected Photovoltaic Project	Mexico
3159	Adaptation to Climate Change Impacts on the Coastal Wetlands	Mexico
3270	Environmentally Sound Management and Destruction of PCBs	Mexico
3813	Integrating Trade-offs between Supply of Ecosystem Services and Land Use Options into Poverty Alleviation Efforts and Development Planning	Mexico
3816	Mainstreaming the Conservation of Ecosystem Services and Biodiversity at the Micro-watershed Scale in Chiapas	Mexico
4763	Strengthening Management Effectiveness and Resilience of Protected Areas to Safeguard Biodiversity Threatened by Climate Change	Mexico
4771	Enhancing National Capacities to Manage Invasive Alien Species (IAS) by Implementing the National Strategy on IAS	Mexico
4792	Conservation of Coastal Watersheds to Achieve Multiple Global Environmental Benefits in the Context of Changing Environments	Mexico
5751	Maintaining and Increasing Carbon Stocks in Agro-silvopastoral Systems in Rural Communities of the Selva Zoque–Sumidero Canyon Complex as a Climate Change Mitigation Strategy	Mexico
9445	Conservation and Sustainable Use of Biological Diversity in Priority Landscapes of Oaxaca and Chiapas	Mexico
9555	Sustainable Productive Landscapes	Mexico
9564	Mexico Municipal Energy Efficiency Project (PRESEM)	Mexico
9649	Implementation of Projects Prioritized by the Sustainable and Emerging Cities Program in Three Mexican Cities	Mexico
4130	Kathmandu Sustainable Urban Transport (SUT) Project	Nepal

GEF ID	Project title	Country
4464	Integrating Traditional Crop Genetic Diversity into Technology Using a BD Portfolio Approach to Buffer Against Unpredictable Environmental Change in the Nepal Himalayas	Nepal
4551	Community Based Flood and Glacial Lake Outburst Risk Reduction	Nepal
5203	Catalysing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal	Nepal
5596	Sustainable Land Management in the Churia Range	Nepal
9437	Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors	Nepal
4	Hon Mun Marine Protected Area Pilot Project	Viet Nam
209	Vietnam PARC—Creating Protected Areas for Resources Conservation (PARC) in Vietnam Using a Landscape Ecology Approach	Viet Nam
1030	Making the Link: The Connection and Sustainable Management of Kon Ka Kinh and Kon Cha Rang Nature Reserves	Viet Nam
1031	Biodiversity Conservation and Sustainable Use of the Marine Resources at Con Dao National Park	Viet Nam
1296	The Green Corridor	Viet Nam
1477	Conservation of Pu Luong-Cuc Phuong Limestone Landscape	Viet Nam
1943	Integrating Watershed and Biodiversity Management in Chu Yang Sin National Park	Viet Nam
2758	WB/GEF POL: Coastal Cities Environment and Sanitation Project—under WB/GEF Partnership Investment Fund for Pollution Reduction in the LME of East Asia	Viet Nam
3032	Environmental Remediation of Dioxin Contaminated Hotspots in Vietnam	Viet Nam
3187	Demonstration of Sustainable Management of Coral Reef Resources in the Coastal Waters of Ninh Hai District, Ninh Thuan Province, Viet Nam	Viet Nam
3603	Removing Barriers Hindering PA Management Effectiveness in Vietnam	Viet Nam
3627	SFM: Promotion of Sustainable Forest and Land Management in the Vietnam Uplands	Viet Nam
4659	LME-EA: Coastal Resources for Sustainable Development: Mainstreaming the Application of Marine Spatial Planning Strategies, Biodiversity Conservation and Sustainable Use	Viet Nam
4760	Conservation of Critical Wetland PAs and Linked Landscapes	Viet Nam
4766	Implementation of Eco-industrial Park Initiative for Sustainable Industrial Zones in Vietnam	Viet Nam
5005	Integrating Biodiversity Conservation, Climate Resilience and Sustainable Forest Management in Trung Truong Son Landscapes	Viet Nam
5365	Energy Efficiency Improvement in Commercial and High-Rise Residential Buildings	Viet Nam
6924	Promoting Climate Resilience in Vietnamese Cities Management	Viet Nam
9361	Mainstreaming Natural Resource Management and Biodiversity Conservation Objectives into Socio-economic Development Planning and Management of Biosphere Reserve in Viet Nam	Viet Nam
9484	Integrated Approaches for Sustainable Cities in Vietnam	Viet Nam
10245	Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam	Viet Nam
10539	Sustainable Forest and Forest Land Management in Viet Nam's Ba River Basin Landscape	Viet Nam
10787	Promote Wildlife Conservation and Responsible Nature Based Tourism for Sustainable Development in Vietnam	Viet Nam

Source: GEF Portal data as of January 2025.

Supplementary data for portfolio and case studies

Figure B.1 Number and funding of GEF projects in the evaluation portfolio, by country



Source: GEF Portal data as of January 2025.

Note: Dollar values in bars are the total amounts allocated to projects included in this analysis, within each country.

Table B.1 GEF funding of evaluation portfolio projects, by country

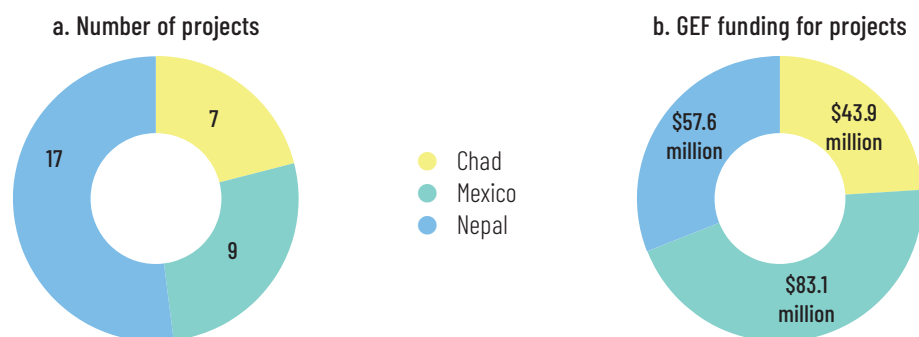
Country	Total funding (million \$)	Percent of total
Bangladesh	32.9	5.78
Botswana	17.0	2.99
Cambodia	49.1	8.64
Chad	19.7	3.46
Costa Rica	21.6	3.79
Ecuador	37.1	6.51
India	61.1	10.73
Lao PDR	55.7	9.78
Mexico	134.4	23.62
Nepal	23.9	4.21
Viet Nam	80.5	14.14

Source: GEF Portal data as of January 2025.

Table B.2 Features, source, and spatial resolution of remotely sensed data sets employed in this analysis

Feature	Source	Resolution
Global administrative zones	geoBoundries administrative zones	Variable
NDVI	NASA LP DAAC at the USGS EROS Center	250 m
EVI		250 m
Land surface temperature		1,000 m
Nighttime lights	Defense Meteorological Satellite Program (DMSP-OLS), Earth Observation Group, Payne Institute for Public Policy, Colorado School of Mines	1 km
	Visible Infrared Imaging Radiometer Suite (VIRS), Earth Observation Group, Payne Institute for Public Policy, Colorado School of Mines	500 m
Population	NASA SEDAC at Center for International Earth Science Information Network	1 km
Topography	NASA/CGIAR	90 m
Precipitation	ECMWF/Copernicus Climate Change Service	0.25 arc degrees
Air temperature		
Surface pressure		
Soil moisture	University of California Merced	2.5 arc minutes
Palmar Drought Severity Index		
Actual evapotranspiration		
Reference evapotranspiration		
Runoff		
Climate water deficit		
Downward surface shortwave radiation		
Global forest change	University of Maryland, Department of Geographical Sciences	30 m

Source: Geospatial Evaluation and Observation Lab, College of William and Mary.

Figure B.2 Distribution of projects in the case study countries by number and GEF funding

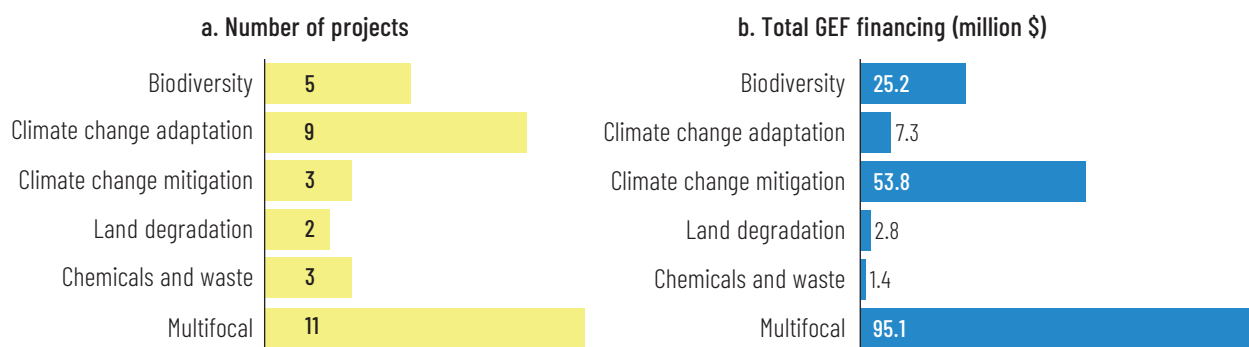
Source: GEF Portal data as of August 2024.

Note: Funding includes GEF project financing, Agency fees, and project preparation grants.

Figure B.3 Distribution of projects in the case study countries by project status

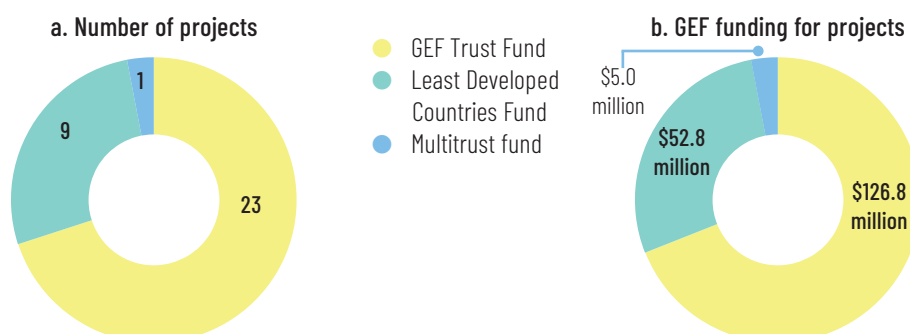
Source: GEF Portal data as of August 2024.

Note: Funding includes GEF project financing, Agency fees, and project preparation grants. Ongoing projects include those that have cleared Chief Executive Officer endorsement but are not yet under implementation.

Figure B.4 Distribution of projects in the case study countries by focal area

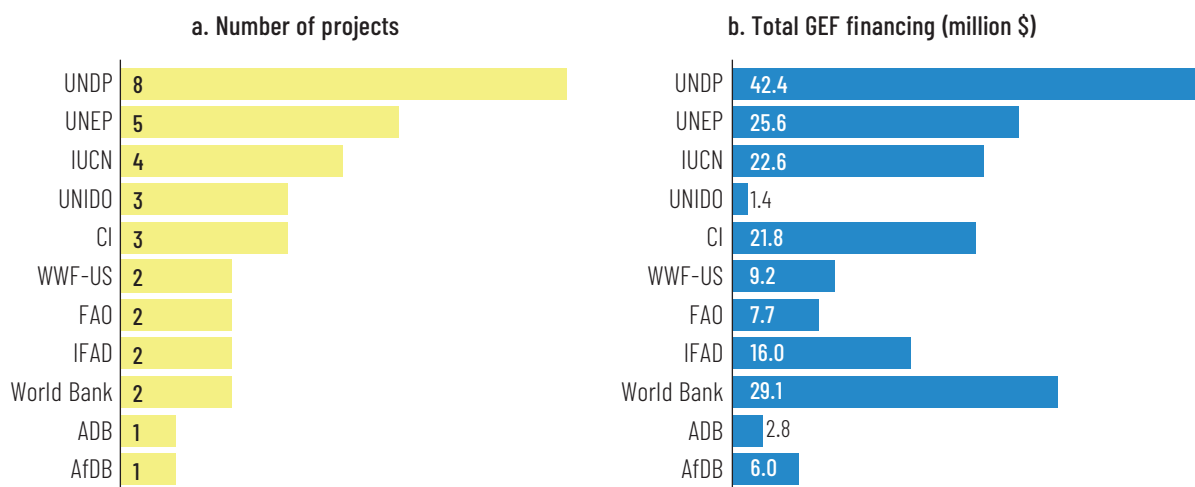
Source: GEF Portal data as of August 2024.

Note: Funding includes GEF project financing, Agency fees, and project preparation grants.

Figure B.5 Distribution of projects in the case study countries by funding source

Source: GEF Portal data as of August 2024.

Note: Funding includes GEF project financing, Agency fees, and project preparation grants.

Figure B.6 Distribution of projects in the case study countries by lead GEF Agency

Source: GEF Portal data as of August 2024.

Note: Funding includes GEF project financing, Agency fees, and project preparation grants. ADB = Asian Development Bank; AfDB = African Development Bank; CI = Conservation International; FAO = Food and Agriculture Organization of the United Nations; IFAD = International Fund for Agricultural Development; IUCN = International Union for Conservation of Nature; UNDP = United Nations Development Programme; UNEP = United Nations Environment Programme; UNIDO = United Nations Industrial Development Organization; WWF-US = World Wildlife Fund-US.

Co-benefits expected at design in case studies

Table C.1 Chad: Expected co-benefits at design by project

Project	Expected co-benefit
PINAMAC ^a	Discussion of co-benefits in formulation documentation: Co-benefits are identified in a general way. Benefits: In Component 1, by promoting afforestation (with half-moons) and reforestation (with adapted local species) options, by supporting assisted natural regeneration, the project sequesters carbon and contributes to land degradation neutrality. Co-benefits: • By establishing community farms, producing seedlings, and promoting value chains, community members will benefit from diversified livelihood opportunities that will reduce their direct impact on resources. Acacia plants will contribute to carbon sequestration, thereby improving soil fertility, and promoting agroforestry and biodiversity conservation while supporting sustainable land use practices. • By training producers in market gardening and agroforestry, the project will create the capacity and technical know-how needed to support environmentally friendly production systems Are co-benefits considered in the theory of change and results framework? In the document, there is no theory of change; and co-benefits are not taken into account in the results framework. What are the co-benefits considered during the design phase? Fairly general definition: Plant production, market gardening (diversification, sources of income), value chains, improvement of soil productivity. Does the design mention lessons learned from previous experience on co-benefits? There is no mention of previous experiences on co-benefits, but there is general mention of previous projects implemented in the country. Does the project design indicate who should have access to eco-benefits (inclusion)? The draft generally mentions gender mainstreaming, but without specific discussion or action. Scaling: Not mentioned. In generic terms, discussion of knowledge management to facilitate the scaling up of effective practices.

Project	Expected co-benefit
Building Resilience ^b	Discussion of co-benefits in formulation documentation: Rural infrastructure development: The main activities will focus on the development of irrigation, livestock, and conservation/processing and marketing, as well as basic social facilities. Value chain and market development: Activities and capacity building will promote the protection of natural and timber resources; development of the sub-sectors of agriculture, livestock, fisheries; improving market access and financing; strengthening nutrition; and the promotion of youth employment. At the local level, there will be expected positive socioeconomic impacts and many impacts on the biophysical and human environment, including (1) improved water availability for crops, livestock, and trees; (2) improvement and diversification of agroforestry productivity and reduction of post-harvest losses; (3) reduced vulnerability to climate and other shocks; (4) diversification of activities, income generation and job creation; (5) preservation of natural resources and improvement of resource management; (6) improved access to basic socioeconomic services; and (7) secure food production. Are co-benefits considered in the theory of change and results framework? No, there is no explicit theory of change. What are the co-benefits considered during the design phase? Includes (1) improving the availability of water for crops, livestock, and trees; (2) improvement and diversification of agroforestry productivity and reduction of post-harvest losses; (3) reduced vulnerability to climate and other shocks; (4) diversification of activities, income generation, and job creation; (5) preservation of natural resources and improvement of resource management; (6) improved access to basic socioeconomic services; and (7) secure food production. Does the design mention lessons learned from previous experience on co-benefits? No Does the project design indicate who should have access to eco-benefits (inclusion)? Attention to women and children (food security). Some specific activities identified for women. Special attention will be paid to women and children due to their more acute food and nutrition insecurity. Specific activities to promote gender equality will include: the production and analysis of sex-disaggregated data throughout the implementation of the project; strengthening the position of women's groups in the field of agricultural and forestry product processing; facilitate women's access to factors of production; the promotion of gender-sensitive infrastructure (micro-irrigation areas, improvement of rural roads, etc.); ensure equal access for men and women to information, capacity-building training and awareness-raising campaigns; and the hiring of a gender expert for the National Human Resources Coordination Unit. Scaling: Presented in a general way (lessons learned can be considered in other future projects).
Albiã ^c	Discussion of co-benefits in formulation documentation: Co-benefits are mentioned, but not very specifically in the GEF document (but the World Bank has prepared a separate document concerning its contribution). Expected results include improved management of the project area, community and private lands, state reserves, and wildlife corridors, including nature-based tourism; commitment of communities on economic activities (market gardening for women, ecotourism for young people); improving access to safe drinking water; Improved water and sanitation. Are co-benefits considered in the theory of change and results framework? No explicit theory of change in the document. What are the co-benefits considered during the design phase? Income diversification (general concept) and sustainable agricultural production. Market gardening to generate alternative income to the exploitation of natural resources Does the design mention lessons learned from previous experience on co-benefits? No Does the project design indicate who should have access to eco-benefits (inclusion)? Not mentioned Scaling: Not mentioned

Project	Expected co-benefit
PARSAT ^d	Discussion of co-benefits in formulation documentation: Benefits are mentioned in the project formulation document. In component 1, the project mentioned securing against climate risks and the intensification of agricultural production (water and soil conservation, improved early seeds, environmental education). Co-benefits include increased yields, soil fertility, tree planting and environmental protection, job creation through beekeeping, market gardening, and the processing of local products. Improved ovens for fish smoking to be popularized, thus reducing the pressure on natural resources. Are co-benefits considered in the theory of change and results framework? Yes, it is captured in the theory of change and the results framework. What are the co-benefits considered during the design phase? Improvement of agricultural water catchment and management, market gardening, beekeeping, processing of local products to create employment and income for young people and women Does the design mention lessons learned from previous experience on co-benefits? No Does the project design indicate who should have access to eco-benefits (inclusion)? The design of the project indicated that it is the youth and the women. Scaling: Not mentioned but some activities are being scaled up such as solar dewatering, spreading threshold, environmental education.
STRADAP ^e	Discussion of co-benefits in formulation documentation: Addressing adaptation challenges by strengthening the resilience of degraded agro-pastoral production landscapes and the livelihoods of vulnerable women and youth. Co-benefits are mentioned and relate to the creation of green jobs for vulnerable youth and women, and the restoration of degraded land. Are co-benefits considered in the theory of change and results framework? Yes, it is taken in the theory of change in order to establish an institutional and policy environment and support concrete measures to build adaptive capacity. What are the co-benefits considered during the design phase? Climate resilience in agro-sylvo-pastoral and fisheries value chains and supporting climate-resilient livelihoods and employment opportunities for rural youth. Does the design mention lessons learned from previous experience on co-benefits? Yes, IFAD's previous projects (REPER and PARSAT) Does the project design indicate who should have access to eco-benefits (inclusion)? The design indicates that vulnerable youth and women are beneficiaries. Scaling: During the assembly, the project did not mention the scaling aspect.
Climate Risks Management ^f	Discussion of co-benefits in formulation documentation: Improving the capacities of populations in vulnerable communities to cope with different climate risks through early warning and index micro-insurance Are co-benefits considered in the theory of change and results framework? Yes, it is taken as part of the results framework through a system for communicating and disseminating agrometeorological advice and building risk management capacities (index micro-insurance). What are the co-benefits considered during the design phase? Dissemination of agrometeorological advisories and index microinsurance Does the design mention lessons learned from previous experience on co-benefits? Yes, projects implemented by UNDP (PNA) on the dissemination of weather advisories Does the project design indicate who should have access to eco-benefits (inclusion)? Producers Scaling: During implementation, the project did not provide for a scaling mechanism.

Project	Expected co-benefit
RECONNECT ⁹	Discussion of co-benefits in formulation documentation: Restoration and maintenance of ecosystem services to reduce greenhouse gas emissions and increase carbon sequestration, in forests and agro-sylvo-pastoral systems. Are co-benefits considered in the theory of change and results framework? No theory of change but the results framework foresaw co-benefits relating to the sustainable management of natural resources through the involvement of local actors, the increased capacity for carbon dioxide sequestration through sustainable management of forest ecosystems, the sustainable exploitation of natural resources through the development of sustainable IGAs and increased productivity of degraded soils. What are the co-benefits considered during the design phase? Carbon dioxide sequestration, restoration of degraded land, management of natural resources Does the design mention lessons learned from previous experience on co-benefits? No Does the project design indicate who should have access to eco-benefits (inclusion)? Rural communities made up of men, women and youth Scaling: Yes, a new proposal is under way for phase II of the project and also scaling up in other areas of the country, including Tandjilé, Batha.

Source: Project design documents.

- Promoting Integrated Natural Resources Management in Support of GGW in Chad (GEF ID 11459), United Nations Environment Programme.
- Building Resilience for Food Security and Nutrition in Rural Communities in Chad (GEF ID 9050), African Development Bank.
- Chad ALBIA—Local Development and Adaptation Project (GEF ID 10315), World Bank.
- Enhancing the Resilience of the Agricultural Ecosystems (GEF ID 5376), International Fund for Agricultural Development.
- Strengthening the resilience of smallholder farmers and ecosystems to the effects of climate change (GEF ID 11550), International Fund for Agricultural Development.
- Community-based Climate Risks Management in Chad (GEF ID 8001), United Nations Development Programme.
- Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits (GEF ID 9417), International Union for Conservation of Nature.

Table C.2 Mexico: Expected co-benefits at design by project

Co-benefit category	Carbon Stocks ^a	Sustainable Landscapes ^b	Sustainable Productive Landscapes ^c	SGP OP7 ^d	Oaxaca ^e	Wildlife Corridors ^f	Maya Forest ^g
Increase in income from the same sources	Sustainable agriculture and forestry with economic benefits through carbon markets.	Increasing financial sustainability in the integrated management of the three priority landscapes	Improvement of the sustainable management of productive territories and increase of opportunities for rural producers	Optimization of forest supply processes (marking, classification, documentation and transport) in the communities that make up the UZACHI. Use of timber waste for the manufacture of toys and marketing.	Traceability in mezcal production to ensure that they do not come from degradation and deforestation processes	No	No

Co-benefit category	Carbon Stocks ^a	Sustainable Landscapes ^b	Sustainable Productive Landscapes ^c	SGP OP7 ^d	Oaxaca ^e	Wildlife Corridors ^f	Maya Forest ^g
New revenue (diversification)	Access to carbon credit markets. Payment for ecosystem services	Yes	Ecotourism	Ecotourism	Commercial use of species other than mezcal such as wild oregano, flowers, deer	Incentives for sustainable production practices	National analyses of financing gaps and barriers to investment in primary forest landscapes and forest-related livelihoods. Regional coalition to mobilize funds to accelerate primary forest conservation and the development of viable forest-related livelihoods.
Ecotourism opportunities	No	Yes. Fishermen's cooperative develop ecotourism in areas of high ecological value.	Promotion of ecotourism associated with local value chains	Yes. Ecotourism in forests.	No	No	No
New job opportunities	Forest Conservation for GHG Mitigation	Sustainable production practices with a market-oriented value chain approach	New sustainable practices (agroecological, agroforestry and silvopastoral) in productive activities with new markets.	Ecotourism	Payment for environmental services and for conserving ecosystems and avoiding deforestation	No	Sustainable land management
Better protection against natural hazards (fires, floods, landslides, etc.);	Reducing people's vulnerability to climate hazards. Reducing landslides through proper water management	No	Organic production and diversification of products that can be incorporated and reach a higher market price, which reduces the risk of loss and damage in the event of the impact of natural hazards.	Application of an ecosystem-based adaptation methodology in the design phase of each project to reduce the risk of meteorological and climatic disasters		Building the adaptive capacities of local communities to face climate hazards. Safeguards to identify and reduce socio-environmental risks.	No
Improving soil fertility	Restoration of degraded ecosystems and improvement of soil quality	No	Practices that favor biodiversity and improve land use. Soil conservation to reduce flood risk	Opportunities for improvement identified include promoting soil conservation practices, supporting initiatives to transfer sustainable technologies to communities, and encouraging diversification of funding sources.	Development of agroforestry systems	No	No

Co-benefit category	Carbon Stocks ^a	Sustainable Landscapes ^b	Sustainable Productive Landscapes ^c	SGP OP7 ^d	Oaxaca ^e	Wildlife Corridors ^f	Maya Forest ^g
Improvement in health conditions (quality of water, air, natural resources)	Improvement of hydrological and ecosystem services.	Managing ecosystem services by providing fresh water and food	Efficient use of energy Comprehensive management of pests, weeds and diseases. Harvesting of higher quality products.	Harvesting and sustainable use of water resources	Water sanitation systems and dry toilets, latrines in rural mezcal-producing communities.	No	No
Improvement in family nutrition	Food security and improved nutrition	Yes	Yes	Food production under the agroecology approach so as not to degrade the natural resource base to foster community resilience	No	No	No
Better access to roads, schools, health services		No	Yes		No	No	No
Improved access to markets/value chains	Sale of carbon credits increases the income of communities	Value chains of 7 productive activities (coffee, honey, corn, fishing, shrimp and ecotourism) to be replicated in cocoa, etc. Market opportunities for every productive organization Smallholders with access to greater market opportunities	Market development and optimization of marketing processes in the wood industry.	Better access to fair financing. The project includes capacity building and training activities for organizations and alliances, with the aim of understanding and accessing fair and sustainable financing mechanisms and channels, strengthening capacities for the development of business plans, and facilitating contact with financial sources to improve the financial resilience of community organizations.	Creation and improvement of production chains around mezcal Opportunities for small local producers, for organized groups of men and women at local fairs, at local events.	No	Innovative business models to develop goods and services compatible with forest conservation. Project preparation mechanism to facilitate access to private and development financing.

Co-benefit category	Carbon Stocks ^a	Sustainable Landscapes ^b	Sustainable Productive Landscapes ^c	SGP OP7 ^d	Oaxaca ^e	Wildlife Corridors ^f	Maya Forest ^g
Improved skills (know-how) and capabilities	Local capacities for resource management. Access to technical support services.	Participation capacities including women and vulnerable groups in the design and implementation of land management plans such as the ADVC. Building capacities to promote adaptation to climate change.	Improvement of producers' organizational capacities and their technical, business and marketing skills for sustainable production.	By building capacities for proper landscape management and the adoption of innovative and sustainable practices and technologies, such as renewable and efficient energy sources, agroecology, sustainable tourism, forestry and fisheries, the project will enable local communities to reduce vulnerabilities and increase ecosystem resilience. Water quality monitoring.	Expansion of production capacities through collective palenques	No	Long-term regional communication plan to mobilize support for the conservation of primary forests and critical forest biomes
Strengthening of social capital, connectivity with rural organizations/ public services.	Cooperation between institutions at the local level for mitigation	Participatory processes in the planning of land use of 1,000 productive organizations.	Business alliances for investments. Generation of local social and economic value by involving communities in the definition of priorities.	Strengthening governance at the landscape level. The project's landscape approach seeks to bring together the actions of individual groups and communities with the common goal of generating a beneficial impact on the landscape as a whole. This involves the participation, commitment and collaboration of many parties.	Local governance scheme in areas voluntarily earmarked for conservation	No	

Co-benefit category	Carbon Stocks ^a	Sustainable Landscapes ^b	Sustainable Productive Landscapes ^c	SGP OP7 ^d	Oaxaca ^e	Wildlife Corridors ^f	Maya Forest ^g
Other co-benefits	Mitigation: carbon sequestration and reduction of GHG emissions. Gender perspective	To integrate the market-oriented value chain approach across all three landscapes, significant investments are required from a combination of financial sources. Improved access to markets and financial mechanisms due to sustainable products. Benefit to vulnerable groups, Indigenous, Afro-descendants, women, young people	Climate change mitigation and adaptation co-benefits in 90-100% of the financing. GHG reduction. Strengthening of community-based organizations to facilitate access to public programs; Creation of participatory monitoring mechanisms that empower community organizations in decision-making. Theory of change is included	Encourage women's participation and create opportunities for youth and other vulnerable groups. Benefits for Indigenous communities. The project seeks to support Indigenous communities that manage natural resources communally. The lessons learned from these communities will be expanded, and innovations will be supported. Participatory monitoring of fauna and water.	Organization of women's groups Financial credit schemes for producers are expected to be created	Strengthening the livelihoods of rural communities and vulnerable groups, including women, youth and marginalized groups.	The project will bring social benefits to local populations, especially vulnerable groups such as women, youth and Indigenous peoples. Component 1 will include the implementation of affirmative actions to integrate these communities by conducting a leadership program and promoting their participation in relevant governance structures.

Source: Project design documents.

a. Maintaining and Increasing Carbon Stocks in Agro-silvopastoral System in Rural Communities of the Selva Zoque-Sumidero Canyon Complex as a Climate Change Mitigation Strategy (GEF ID 5751), Conservation International.

b. Conservation and Sustainable Use of Biological Diversity in Priority Landscapes of Oaxaca and Chiapas (GEF ID 9445), Conservation International.

c. Sustainable Productive Landscapes (GEF ID 9555), World Bank.

d. Seventh Operational Phase of the GEF Small Grants Programme in Mexico (GEF ID 10504), United Nations Development Programme.

e. Promoting sustainability in the agave-mezcal value chain through restoration and integrated management of biocultural landscapes in Oaxaca (GEF ID 10869), United Nations Environment Programme.

f. From conflict to coexistence, safeguarding wildlife corridors in Mexico for sustainable development (GEF ID 11156), World Wildlife Fund-US.

g. Mexico Mesoamerica Forest IP Project: Securing benefits for the well-being of local communities and the ecosystems of the Maya Forest (GEF ID 11274), International Union for Conservation of Nature.

Table C.3 Nepal: Expected co-benefits at design by project

Project	Expected co-benefit
Climate Resilient Natural Capital ^a	Discussion of co-benefits in formulation documentation: Mention of socioeconomic benefits in project identification document but in a general way. Benefits categorized into “national” and “local.” National benefits, under outcome 1 and 2, consist of technical capacity of policy makers and decision-makers on climate change adaptation through ecosystem restoration. Local socioeconomic benefits, under outcome 3, “Demonstration measures that reduce vulnerability and restore natural capital”; activities include trialing drought-resilient species and those producing fruit, fiber, timber and fodder, and water-tolerant species; undertake agroforestry; improved pasture management; contouring and stone ridging; identify feasible alternative livelihoods; increase tourism infrastructure; promote restoration-based tourism; water-efficient crop production; In addition, strengthening local institutions and greater women’s representation, training, and skills. Are co-benefits considered in the theory of change and results framework? In CEO endorsement document, TOC presented as “problem tree” and “solution tree” and TOC per outcome. The problem of increased poverty is envisioned to be addressed to lead to enhanced livelihoods. However, the pathways are not clear. TOC revised in the midterm review, yet not clear on socioeconomic benefits. What are the co-benefits considered during the design phase? Stated generally; for instance, promoting tourism and its infrastructure; climate resilient crops introduction; improved water management. These are assumed to lead to resilient livelihoods. Does the design mention lessons learned from previous experience on co-benefits? No explicit mention of prior experience of co-benefits; mention of the experience of other forestry, conservation, or resilience projects. Does the project design indicate who should have access to eco-benefits (inclusion)? Project identification document specifies women to be preferentially provided with skills; however, it misses out Dalits and Indigenous people (IPs) as specifically targeted beneficiary in accessing co-benefits. Scaling: Does not mention scaling up of co-benefits; however, significant element of scaling up of ecosystem-based restoration approaches such as through technical capacity of stakeholders, academic and training, and institutions at various scales.
Climate Resilient Livelihoods ^b	Discussion of co-benefits in formulation documentation: Primarily framed in terms of planning for and adoption of integrated watershed management in vulnerable watershed/sub-watersheds. Indirect mention of co-benefits of adaptation interventions. Emphasis on supply-side actors, especially government agencies. Co-benefits indirect and implicit. Are co-benefits considered in the theory of change and results framework? Mention of certain outputs that potentially lead to co-benefits, including conservation farming, integrated agroforestry, along with fodder and controlled fuelwood production; catchment ponds with groundwater recharge. What are the co-benefits considered during the design phase? Not explicitly as socioeconomic benefits—but include women empowerment and their stewardship; GESI mainstreaming. In UNDP Risk Log, mention of “immediate benefits for communities in terms of awareness, preparedness, skill development and income generation (agro-forestry schemes)” Does the design mention lessons learned from previous experience on co-benefits? Not explicit. Does the project design indicate who should have access to eco-benefits (inclusion)? Not mentioned for benefits from interventions. But “Women, Dalit and marginalized groups will be hired at assistant level” in outcome 1 interventions. Scaling: No direct mention of scaling of co-benefits. Mention of scaling up of watershed restoration to at least 844 sq km through securing knowledge, directing public finance and private funding.

Project	Expected co-benefit
Kathmandu Valley ^c	Discussion of co-benefits in formulation documentation: Extensive use of adaptation and non-adaptation co-benefits, including (1) reducing urban temperatures by planting trees and other vegetation; (2) providing livelihoods through the use of productive trees in open spaces; (3) improving surface water quality; (4) increasing habitat for biodiversity; (5) providing recreational spaces; and (6) strengthening cultural values. Further co-benefits include improved quality of soil, air and water; a reduced urban heat island effect; enhanced aesthetic and recreational value of public spaces; alternative livelihood options. Are co-benefits considered in the theory of change and results framework? Indirect mention of co-benefits that may result from outcome 3 interventions—rainwater harvesting; household infiltration pits; urban farming/ gardening, conservation ponds; Results framework—in outcome 3—mentions 50% in 6 wards in 5 municipalities experience improvements in supply of ecosystem services (flood control, water availability, soil stabilization, greenery improvement) What are the co-benefits considered during the design phase? Rainwater harvesting; household infiltration pits; urban farming/ gardening, conservation ponds; flood control, water availability, soil stabilization, greenery improvement. Does the design mention lessons learned from previous experience on co-benefits? No. The project envisions reviewing lessons from previous interventions, and adoption of this project's lessons in the future. Does the project design indicate who should have access to eco-benefits (inclusion)? Not apparent. Emphasis mainly on supply side. Not specific on the categories of people who will benefit. Scaling: Not apparent. Scaling up mainly considered for knowledge exchange.
Lakhandei River Basin ^d	Discussion of co-benefits in formulation documentation: "Co-benefits" not explicitly used but social and economic benefits widely considered in the project document. It seeks to achieve productive landscapes with profound impacts on livelihoods (and biodiversity). Value chain promotion, markets development, skills development in the youth, horticulture examples of co-benefits. Problems in marketing of nontimber forest products, unequal distribution of benefits; Also identifies socio-political issues as problems, such as unemployment; feminization in agriculture [TOC]. Are co-benefits considered in the theory of change and results framework? Extensively considered in TOC; 02.3 Restore farmland; cultivate horticulture and forest crops; 03.2 Sustainable land management (SLM) product-based value chain development; 04.1 Economic & social benefits from SLM. Results framework adopts GESI and needs and priorities of vulnerable groups. What are the co-benefits considered during the design phase? Sustainable-land-management-based enterprises for women; improved food security (e.g., horticulture plantation); income (e.g., capacity development on value chain; establishment of local product-based marketplaces (Sindhuli and Lalbandi). Does the design mention lessons learned from previous experience on co-benefits? Not apparent. Does the project design indicate who should have access to eco-benefits (inclusion)? Commits to considering needs and priorities to ensure the inclusion of women, the poor, Indigenous Peoples, under-privileged, youth and vulnerable people as appropriate, e.g., 50 SLM practice-based enterprises owned by women. Support women, poor, marginal, and ethnic groups for creating/improving decentralized marketplaces/ community facility centers to improve market access. Scaling: Upscaling through the institutions—CFUGs, cooperatives—within the watershed.

Project	Expected co-benefit
Integrated Landscape Management ^e	Discussion of co-benefits in formulation documentation: Includes both environmental benefits and forest and biodiversity co-benefits, include: climate smart agriculture and community gardens and sustainable supply of biomass energy. Co-benefits include biogas (e.g. with health and env benefit), livelihood benefits through interventions. Demonstration project interventions in the national park, buffer zone, and corridors. Training for applied forest management to community and private sector. Are co-benefits considered in the theory of change and results framework? Component 3 of the project consists of significant co-benefits, while 1&2 focus on national capacity & enabling environment, and integrated planning. TOC. Results Framework. What are the co-benefits considered during the design phase? Integrated livestock management, including higher productivity cattle and reduced grazing area, invasive species removal in grasslands and riparian areas, community nurseries and revegetation with native species (livelihood opportunities). Does the design mention lessons learned from previous experience on co-benefits? Mentions lessons from several projects, but in generic terms, not specific to co-benefits. Does the project design indicate who should have access to eco-benefits (inclusion)? Engages women and Indigenous Peoples but does not include Dalits. No specific mention of disaggregated marginalized groups in access to co-benefits; the distribution tends to be generic across populations. Scaling: The potential for scaling is more likely, especially as WWF has engagements across other NPs, BZs and corridors.
ECSM FoLaBi EH ^f	Discussion of co-benefits in formulation documentation: The project's co-benefits are considered in terms of greenhouse gas emissions reduction; and social-economic benefits as "incentive mechanisms." Includes: improved food security through sustainable and resilient production of agricultural and livestock products; increased and stabilized livelihoods through IGAs based on flows of ecosystem goods and services. Are co-benefits considered in the theory of change and results framework? Both results framework and TOC incorporate co-benefits but not worded that way. What are the co-benefits considered during the design phase? Results framework: 300 Community Forest User Groups and other LFUGs/CBOs and 30,000 household implement forest, livestock, agriculture and other livelihoods support practices; 10 pro-poor, biodiversity-enhancing livelihood opportunities identified and value chain supported; 100 Forest User Groups linked to markets. TOC: incentives to conservation; value chains etc. Does the design mention lessons learned from previous experience on co-benefits? The project will draw on lessons from other projects, but no explicit reference to learning on co-benefits. Does the project design indicate who should have access to eco-benefits (inclusion)? Acknowledges the risk of elite capture and exclusion of poorest and disadvantaged groups; 30,000 households (150,000 population, 50% female) will benefit from livelihood intervention; no specific mention of IPs and Dalits in benefits access; but committed to socially disaggregated reporting. Scaling: Not apparent.

Source: Project design documents.

a. Catalysing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal (GEF ID 5203), United Nations Environment Programme.

b. Developing Climate Resilient Livelihoods in the Vulnerable Watershed in Nepal (GEF ID 6989), United Nations Development Programme.

c. Ecosystem-Based Adaptation for Climate-resilient Development in the Kathmandu Valley, Nepal (GEF ID 8009), United Nations Environment Programme.

d. Restoring the degraded watershed and livelihoods of Lakhadei river basin through Sustainable Land Management (GEF ID 10469), International Union for Conservation of Nature.

e. Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors (GEF ID 9437), World Wildlife Fund-US.

Co-benefits achieved in case studies

Table D.1 Chad: co-benefits achieved by project

Co-benefit category	PARSAT ^a	Climate Risks Management ^b	RECONNECT ^c
Increased income from the same sources	Yes		Yes
New revenue stream (diversification)	Yes (vegetable crops, processing of local products [oil, fish, market gardening products], beekeeping)		Yes (vegetable and fodder crops), beekeeping, production/sale of forest/fruit plants, collection/sale of nontimber forest products)
Opportunities for ecotourism			
New job opportunities	Yes		Yes
Better protection against natural hazards (fires, floods, landslides, etc.)	Yes (alert, dissemination of weather information)	Yes (alert, dissemination of weather information)	Yes (early fire to control bushfires)
Improved soil fertility	Yes (organic manure, hydro-agricultural development)	Yes (advice and training)	Yes (organic manure, hydro-agricultural development)
Improvement of health conditions (quality of water, air, natural resources, etc.)	Yes	Yes (prevention of health risks)	Yes
Better access to roads, schools, health services	Yes (establishment of rural road maintenance committees, animal health)		Yes (animal health)
Better access to markets/ value chains to markets	Yes		Yes
Better skills (know-how)	Yes	Yes (better knowledge of weather conditions/awareness of need to change crop calendar, given the flooding during the rainy season)	Yes
Strengthening social capital, connectivity with rural organizations/public services	Yes	In part, through the monitoring committees at the subprefecture level	Yes

a. Enhancing the Resilience of the Agricultural Ecosystems (GEF ID 5376), International Fund for Agricultural Development.

b. Community-based Climate Risks Management in Chad (GEF ID 8001), United Nations Development Programme.

c. Restoring Ecological Corridors in the Mayo-Kebbi Ouest, Chad, to Support Multiple Land and Forests Benefits (GEF ID 9417), International Union for Conservation of Nature.

Table D.2 Mexico: co-benefits achieved by project

Co-benefit category	Sustainable Productive Landscapes ^a	SGP OP7 ^b	Sustainable Landscapes ^c
Increased income from the same sources	Yes		Not yet evident
New revenue stream (diversification)	Incipient	Incipient	Not yet realized
Opportunities for ecotourism		Yes	Yes
New job opportunities	Yes		Yes
Better protection against natural hazards (fires, floods, landslides, etc.)	No	No	No
Improved soil fertility	Yes (biofertilizers)	No	No
Improvement of health conditions (quality of water, air, natural resources, etc.)	Likely, but no evidence	No	No
Better access to roads, schools, health services	No	No	No
Better access to markets/value chains to markets	Yes	Incipient	No
Better skills (know-how)	Yes	Yes	Yes
Strengthening social capital, connectivity with rural organizations/public services	Yes	Yes	Yes

a. Sustainable Productive Landscapes (GEF ID 9555), World Bank.

b. Seventh Operational Phase of the GEF Small Grants Programme in Mexico (GEF ID 10504), United Nations Development Programme.

c. Conservation and Sustainable Use of Biological Diversity in Priority Landscapes of Oaxaca and Chiapas (GEF ID 9445), Conservation International.

Table D.3 Nepal co-benefits achieved by project

Co-benefit category	Climate Resilient Natural Capital ^a	Lakhandei River Basin ^b	Integrated Landscape Management ^c
Increased income from the same sources	Yes	Yes	Yes
New revenue stream (diversification)	Yes (nontimber forest products plantation or processing)	Yes (value chain, marketing)	Yes (goat, milk production from cowshed improvement)
Opportunities for ecotourism			Yes (home stays)
New job opportunities	Yes (restoration work, construction)	Yes (construction, marketing)	Yes (leaf plate making)
Better protection against natural hazards (fires, floods, landslides, etc.)	Yes (gully control, check dams)	Yes (gully control)	Yes (flood control structures)
Improved soil fertility	Yes (ecological restoration, water retention in conservation pond)	Yes (expected improved watershed management)	Yes (from shed improvement, liquid manure)
Improvement of health conditions (quality of water, air, natural resources, etc.)		Yes (water quality and groundwater expected to improve)	

Co-benefit category	Climate Resilient Natural Capital ^a	Lakhadei River Basin ^b	Integrated Landscape Management ^c
Improved family nutrition		Yes (expected increased vegetable farming and consumption)	
Better access to roads, schools, health services			
Better access to markets/value chains to markets	Yes (nontimber forest product processing, marketing)	Yes (vegetable value chains)	Yes (goat, milk, leaf plate making)
Better skills (know-how)	Yes (nontimber forest product cultivation)	Yes	Yes (cow-shed improvement; liquid manure preparation;
Strengthening social capital, connectivity with rural organizations/public services	Yes	Yes (youth, women's group, community forest user group)	Yes (buffer zone user group, community forest user group)
Other co-benefits	Community leadership; women empowerment	Greenhouse gas reduction	Community leadership; women empowerment

a. Catalysing Ecosystem Restoration for Climate Resilient Natural Capital and Rural Livelihoods in Degraded Forests and Rangelands of Nepal (GEF ID 5203), United Nations Environment Programme.

b. Restoring the degraded watershed and livelihoods of Lakhadei river basin through Sustainable Land Management (GEF ID 10469), International Union for Conservation of Nature.

c. Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors (GEF ID 9437), World Wildlife Fund-US.

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Chad case study

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Mexico case study

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Karna Bahadur Budhathoki, and civil service staff, Mayor, Bangad Kupinde Municipality, Devasthal, Salyan

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Patabhar Buffer Zone User Group/Community Forest User Group members, 15 participants, Geruwa Rural Municipality, Ward 2, Bardiya

Janata Secondary School, 6 eco-club participants (students/teachers), Janakinagar Rural Municipality, Ward 9, Amarabati

Madhyabindu Buffer Zone User Group, 17 participants, Rapti Sonari Rural Municipality ward 8, Banke district; Balapur village

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Sabitra Pun, FECOFUN, Banke District chairperson

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